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## Girly girls, tomboys, athletes and nerds: A phenomenological study of social context in the specialised school environment

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This article was originally published as:

Eddles-Hirsch, K. (2013). Girly girls, tomboys, athletes and nerds: A phenomenological study of social context in the specialised school environment. *Scottish Journal of Arts, Social Sciences and Scientific Studies*, 17 (1), 88-101.

Original article available here:

[http://scottishjournal.co.uk/paper/SJASS\\_Vol.17\\_No.1.pdf](http://scottishjournal.co.uk/paper/SJASS_Vol.17_No.1.pdf)

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SCOTTISH JOURNAL OF  
ARTS, SOCIAL SCIENCES  
AND  
SCIENTIFIC STUDIES

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VOLUME 17, ISSUE I  
December, 2013

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# Survey of share pricing securities in some selected commercial banks in Nigeria

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## **Abstract**

The study surveyed share pricing securities in some selected commercial banks in Nigeria. As a survey research design study using ordinary least square method of multiple regressions to analyze the trends in commercial banks in Lagos State, instrument used to collect data was secondary in nature and in time series of twenty (20) years from 1988 to 2007. Two research hypotheses were raised and analyzed through linear regression and Durbin Watson's statistical analysis. Findings showed correlation co-efficient (R) equals to 0.307 which depicts that the level of correlation coefficient between the commercial banks' profit and All Share Index of the industry during the period under review (1988 to 2007) with Durbin Watson (DW) test of commercial banks as 1.054 showing that there is evidence of auto correlation between the identified variables. Also, there was correlation co-efficient (R) of bank equal to 0.237 which means there is correlation between the profitability and All Share Index during the period of under review (1988-2007), and the co-efficient of Multiple Determination ( $R^2$ ) is 0.056 showing that the 'Goodness of fit' between profitability and All share Index is 5.6 percent. It observed that there is relationship between banks profitability on shares and securities pricing in commercial banks. Study confirmed that 13.3 percent correlations exist in first bank and 20 percent in second bank with  $R^2 = 0.018$  depicting a 'goodness of fit' of 1.8 percent, showing that only 1.8 percent changes in Dividend Per Share declared at the period could be attributed to Return on Capital Employed (ROCE), and so there is relationship between corporate governance practices on market price of shares and securities in commercial banks. Discussions, conclusion and recommendations to the study were extensively made in the paper.

**Keywords:** Survey, commercial banks, shares, pricing-securities, roce, asi

## Introduction

There are different contributions as far as the history of stock exchange is concerned. Some traced the history to France in the 12th century while some traced it to Roman Empire in the 16th century. History reveals that the practice that have gradually metamorphosed into stock exchange, as it is known today, started from the burgeoning trade in agricultural and other commodities developed in some of the major European centers during the Middle Ages. It was the practice in this trade fairs for traders to gather at a place on appointed days to strike bargains in commodities as trade was frequently conducted on credit terms and with time instruments such as Bills of Exchange and Notes, which came to be in use as evidence of the credit and as an instruments for effecting settlement.

The emerging pattern of the institutional framework for the creation of wealth in free enterprise economics which brought the institution of the Stock Exchange into being in medieval Europe has, throughout the succeeding centuries, continued to support the institution and to justify its existence, ensuring its current placing today as the pivot of the capitalist economic system. Today the institution has sprouted in many countries spanning across the globe. In many of these countries the stock exchange has served to facilitate the accumulation of savings and their efficient channeling into competing productive uses without violating the basic principle of free enterprises or private entrepreneurships.

The tremendous impact which the Stock exchange introduces to the capital formation and investment process, and ultimately to the promotion of individual and national well-being and prosperity, makes it today a vital component of the total strategy for promoting national economic development. It was probably because of these attractions that the emerging Nigerian nation in 1961 subscribed to the establishment of a Stock Exchange in Lagos. Stock Exchange of Nigeria and by Nigerians is called "Nigerian Stock Exchange". Nigerian Stock Exchange (NSE) was established in 1960 as the Lagos Stock Exchange and got legal backing in 1961 when the Federal parliament passed "The Lagos Stock Exchange Act, 1961." It commenced operations with nineteen securities enrolled for trading and by December 1977 its name was changed to "The Nigerian Stock Exchange". Currently, it consists of eight branches and the Head Office, launched in 1961, in Lagos. The eight branches are as follows: Kaduna, 1978; Port Harcourt, 1980; Kano, 1989; Onitsha, February 1990; Ibadan, August 1990; Abuja, October 1999, Yola, April 2002 and Abeokuta, November 2008 with each branch has a trading floor.

The trading system on the NSF is fully automatic as its guiding principle has been the attainment of the Universal motto of "My Word Is My Bond". When the Exchange was opened in 1961, it was expected to make certain vital contributions to national development. The Exchange found itself in an environment that is neither simple nor static because of the conditions under which the stock market traditionally operates are also neither simple nor static. They present varying degrees of complexities.

As at December 31, 1999, there were two hundred and sixty-eight securities made up of fifteen government stocks, fifty-eight industrial Loan (Debenture/Preference stocks) and one hundred and ninety-five Equities (Ordinary Shares) of companies, all with a total market capitalization of approximate N300 billion. On August 18, 2006, The Nigerian Stock Exchange (NSF) had about 282 enrolled companies with a total market capitalization of approximately N4 trillion (\$31.5 billion then). As at the close of trading activities on the floor of the Nigerian Stock Exchange on Tuesday, September 30, 2008; equities in 1<sup>st</sup> tier security market alone were two hundred and three (203) as depicted in table below:

**Table 1: Sectors and the number of Equities listed in 1<sup>st</sup> Tier Security Market**

S/N	Sectors	Number	S/N	Sectors	Number
1	Agriculture and Agro-Allied	8	18	Commercial/Services	3
2.	Airline Services	2	19	Computer & Office Equipment	6
3	Automobile and tyres	4	20	Conglomerates	8
4	Aviation	2	21	Construction	6
5	Banking	21	22	Engineering Technology	4
6	Breweries	7	23	Food/Beverages & Tobacco	16
7	Footwear	2	24	Media	1
8	Healthcare	12	25	Mortgage Companies	2
9	Hotel & Tourism	3	26	Other Financial Institutions	6
10	Industrial/Domestic Products	12	27	Packaging	9
11	Inform. Comm. & Telecom.	2	28	Petroleum(Marketing)	8
12	Insurance	29	29	Printing & Publishing	4
13	Leasing	1	30	Real Estate	1
14	Machinery (Marketing)	2	31	Real Estate Investment Trust	1
15	Maritime	1	32	Road Transportation	1
16	Building	7	33	Textiles	4
17	Chemical and Paints	7	34	The Foreign Listings	1
	Grand Total				203

**Source:** Daily Official List, Tuesday, September 30, 2010.

Price quotation on the Exchange Market is made by members based on specific orders by clients or in certain cases on their independent judgment or assessment of the market. Buying and selling orders are indicated by two prices, e.g. 60k-70k, the lower representing buying interest and the higher a selling interest. It is very common to have only a single quotation in which there is either a buying or selling interest followed by either a plus or minus sign where plus indicating buyers and minus indicating sellers such as 60k+ and/or 60k . The normal is that the independent forces of supply and demand determine the gap between buying and selling quotation but occasionally certain privileged information which are not otherwise available to the investing public may force the established process to be put temporarily in abeyance. However, no Security Exchange worth its reputation would allow prices to be fixed indiscriminately without some amount of monitoring as one of the major duties of stock exchange is to stop insider information that market participants could be used for personal gain.

Stockbrokers perform the role of intermediary between the sellers and buyers of a share on one hand and the Stock Exchange on the other hand. The share price of any company at any given date on the Stock Market is arrived at through technical processes that appear reasonable and fair. Having debated the price movement of security, through logical arguments, stockbrokers react by increasing or stay action on price movement. There may be occasions when price movements may not be unanimous as a result of personal perception and understanding of the corporate data available to stockbrokers. This normally gives room for concessions to be arrived at. "Call-over" system of trading has been in operation since the inception of the NSE until 1998 when "Automatic Trading System" (ATS) was introduced to conform to the trading system of other Stock Exchange in the developed countries.

On the other hand, securities are documentary evidence of ownership or entitlement to claim up the assets of the issuing organization, which may be a business firm, government, or a quasi-government institution. These documentary evidences usually have no fixed or absolute value but are traded on the Stock Exchange at value, which are subjectively determined by those buying and selling them through forces of demand and supply, and through 'real-time online' information that concerns the organization whose shares are being traded. There is certain to be found, at any one

tune and at a certain level of price, some people who would be willing to rush into the ownership of a security just as other persons are eager to get out of it.

A Stock Exchange has many things at the same time. First, it is a place where securities (bonds, stocks and shares) of various types are traded openly and where one could purchase or sell any of such securities relatively ease. It is really a place where the enormous capital which is required to operate the huge industrial and commercial corporation could be raised in such a large amount and at such competitive terms (cost, conditions, length of negotiations and so.).

### **Conceptual and Empirical Framework on share pricing securities**

It has been observed that pricing of securities in the capital market is a mixture of qualitative analysis and forces of demand and supply. Price movements in the Secondary market are determined in the main by the forces of demand and supply. Other factors such as political and economic considerations are far beyond the “day-to-day affair of individual companies”. Yohannes and Lulseged (1997) were of the opinion that the usual thing in advanced economic system where efficient capital market conditions exist is that free market forces are usually relied upon to determine rational prices for new securities. He added that the Nigerian Capital Market situation does not operate along such lines for Government intervenes in setting prices for public issues of security. He gave the reasons for such intervention on the part of government as the overt imperfection of the Nigerian Capital Market, and the ignorance of ill-equipped investors to appreciate the technicalities of the market. The pricing of securities, particularly equities in the secondary market in Nigeria, has been a subject of controversy if not of criticism. He explained that criticisms have come not only from senior executives of quoted companies who, at time, perceived that their shares have been undervalued but also from investors generally (both institutional and private), experts in securities pricing, stockbrokers in developed Exchanges, and other keen observers of the Nigerian Capital Market.

A vivid look at price movement in the Nigerian Stock Exchange showed that due to the global market collapse of 1987, it was agreed by members of the International Federation of Stock Exchange and its Security Exchange Commission equivalent that volatility of the market be reduced by limiting the daily movement of prices. While some countries opted for percentage limit ranging from 5% to 10%, Nigeria regulatory institutions chose a limit of 10 Kobo daily (then changed to 20 kobo daily). The push to make Nigeria adopt a percentage limit was finally accepted in 1996.

On the other hand, empirical evidence in support of efficiency is much less than that from developed markets. Fama (1965), using the 30 US companies which make up the Dow Jones industrial index found evidence of dependence in the price changes. Conrad and Juttner (1973) applied parametric and non-parametric tests to daily stock price changes in the German Stock Market. They found that the random walk hypothesis is inappropriate to explain the price changes. With respect to the USA and the UK, the evidence supports the random walk hypothesis but for all other markets, but the random walk hypothesis was rejected. Frennberg and Hansson (1993) examined the random walk hypothesis using Swedish data from 1919 to 1990 when they found that Swedish stock prices have not followed a random walk in that period. Scholes (1972) found that movement in security prices is associated with market wide information that differentially affects the value of security and the volume of each security. When the size of stock is increased in the market due to fresh issue, there is a belief that price of the stock must fall to induce investors to purchase the additional share. This would be so if the excess demand curves be held at lower prices.

Jagadeesh (1990) concluded his study on predictability of returns on securities by rejecting the hypothesis that the stock prices follow random walks. To him predictability of stock returns could be attributed to either market inefficiency or to systematic changes in expected stock returns. The finding of Scholes (Op cit) on the effect of share volatility has on the behaviour of its price was landmark study in the sense that there was a negative relationship between stock prices and future stock volatility, a phenomenon attributable to the leverage effect. Their results showed that small

firm's stock volatility tends to be more responsive to changes in their stock prices. Conditional variances of stock returns on the average become less sensitive to changes in stock prices. The result of their study showed a consistent pattern in time series properties of security returns across firms of different market values. The nature of the relations between stock's price dynamics and firm size was maintained but the non-parametric tests show that the strength of the relations change overtime.

The findings of Conrad and Juttner (1973) strongly indicated that low-priced stocks do not fluctuate more widely than high-price stocks, other factors being constant. Studying the behaviour of stock prices, Pearce Douglas, and Roley (1983) concluded that low-priced stocks have a probability of advancing or declining more than higher priced stocks, and this changes in movement of stock prices and its predictability in another perspective. Infact, the Daily Official List is obviously a dependable instrument for ascertaining share price movement and as a tool to assist in predicting future performance of share prices to some extent, everything being equal. Daily Official List is an authoritative document issued by the council of Stock Exchange, showing useful corporate data on daily business rating for all quoted securities to an investor in appraising or monitoring their portfolio performance for best results.

Infact, the prices follow trend pattern, and markets trend up, down, and sideways (that is, flat) made it clear of the principles of Technical analysis which is based on the premise that a market's price reflects all relevant information, so, their analysis looks more at "internals" than at "external" such as news and events. Price action also tends to repeat itself because investors collectively tend toward patterned behaviour, hence technicians' focus on identifiable trends and conditions. As result, the study surveyed influence of shares pricing and securities in banks on one hand, and performance in commercial banks which involve the mechanism for share and securities pricing in Nigeria.

### **Statement of the Problem**

The study surveyed share pricing and securities on the performance of selected commercial banks in Nigeria. This was to determine the relationship between organization performance along with shares and securities pricing in the stock market on one hand, and to enumerate the influence of corporate governance on market price of shares and securities of the selected commercial banks. This however necessitated the two hypotheses below:

### **Hypotheses**

**H<sub>01</sub>:** There is no relationship between banks profitability on shares and securities pricing in Nigerian commercial banks

**H<sub>02</sub>:** There is no relationship between corporate governance practices on market price of shares and securities in Nigerian commercial banks

### **Methodology**

As a survey research design study via the adoption of the ordinary least square method of multiple regressions to analyze the trend of financial institutions in the effort of economic growth, population comprised of all the commercial banks and allied corporations that engaged in the share pricing securities in Lagos State of Nigeria with sample to the study included the commercial banks within Lagos State metropolitan.

### **Instrument**

The instrument used to collect data was secondary in nature and in time series of twenty (20) years from 1988 to 2007 as these data were in accordance to the hypotheses formulated. Besides, documented materials provide tools for further reading and hence make is relevance in the present study.



### Data collection method

The data used were gathered from secondary sources which constituted annual reports of the banks under study. The document sources usually provide a frame work on which the central idea and research work is usually based on.

### Model specification

In a bid to present a justified result of surveying of share pricing securities in some selected commercial banks in Nigeria, a model has to be developed. In this regard, multiple regression model which is transformed into mathematical form for an empirical analysis in form of dependent and independent variables as  $Y = f(X)$  where  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$  such that  $Y$  = Dependent Variable,  $X$  = Independent variable,  $\beta_0$  = constant term,  $\beta_1$  = coefficient of  $X_1$ ,  $\mu$  = Error term with hypothesis one becoming  $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \mu$ , where  $Y$  = Bank profitability (GDP, Dependent Variables),  $X$  = All Share Index (asi, Dependent Variables),  $\beta_0$  = Constant Term,  $\beta_1$  = Coefficient of  $X_1$  and  $\mu$  = Error term.

The underline assumptions is the application of Multiple Ordinary Least Square (OLS) under Random stochastic term of zero mean of stochastic term  $(\mu) = 0$  where constant variance of stochastic term at all levels of explanatory variable  $\text{Var}(\mu) = \sigma\mu^2$ . Independent stochastic terms at different levels of the explanatory variable  $\text{Cov}(\mu_i, \mu_j) = 0$  such that Independent stochastic term of the explanatory variable  $\text{Cov}(\mu_i, X_i) = 0$  with Stochastic term normally distributed  $\mu_i \sim N(0, \mu_i)$  and objective variable in a random variable with a constant variance at all levels of explanatory variables are normally distributed. An Independence explanatory variables  $\text{Cov}(X_i, X_j) = 0$ .

After estimating the model, one evaluates the result in order to determine the reliability. Here evaluation consists of deciding whether the estimates of the parameters are theoretically meaningful and statistical satisfactory.

As a result, various criteria may be classified into three groups namely the Economic A Priori criterion, which refers to the sign and the size of the parameter of economic relationship, in most cases the wrong sign and size of the parameter may be attributed to deficiencies of empirical data employed for the estimation of the model.

Secondly, statistical Criteria which are determination by statistical reliability of the estimates of the parameters of the models with most widely used statistical criteria of correlation co-efficient and the standard deviation (standard error) of the estimate, F-statistics and t-statistics.

The last was by Coefficient of Multiple Determination ( $R^2$ ) which is the square of the correlation coefficient that measures the goodness of fit of the parameters estimated; it shows the percentage of the total variation of the dependent variables that can be explained by the changes of the explanatory variables. The value of  $R^2$  lies between 0 and 1 but the higher the  $R^2$  the greater the percentage of the variation of  $Y$  explained by the regression line, the close  $R^2$  to zero, the worse of fit.

Also standard deviation of standard error is a measure of the dispersion of the estimates around the true parameter though less reliable it is and vice versa. The F- Statistical is the ratio of a two independent estimates of a variance which have been obtained from sampled data. Each estimate involves some less of degrees of freedom decision rule. If  $F^*$  is greater than  $F$ , one rejects the null hypothesis but if  $F^*$  is less than  $F$  one does not reject the null hypothesis as  $F^*$  equal estimate variance form 'between' the means variation and estimate variance from "with" the samples variation.

T-statistical is the observed value of t-ratio which composed the theoretical value of  $t$  obtained from the t-table with  $n-k = n-4$  degrees of freedom. If  $t^*$  falls in the critical region, one rejects the null hypothesis where

$$t = \frac{\bar{X}_1 - U}{S_x} \quad \frac{t^* B_i}{6B}$$

Econometric Criteria are set by the theory of econometrics and aim at the investigation of whether the assumption of the economic methods employed is satisfied or not in any particular case. They determine the reliability of the standard criteria and help to establish whether the estimates have the desirable properties of unbiased, consistency etc. To test the validity of the assumption of non-auto correlated disturbances, one may compute a statistic known as 'Durbin–Watson statistics' denoted by

$$d^* = \frac{\sum_{t=1}^n (e_t - e_{t-1})^2}{\sum_{t=1}^n e_t^2}$$

where Decision Rule  $d^* < d_l$  = Positive auto - correlation and otherwise

## Findings

**H<sub>01</sub>:** There is no relationship between banks profitability on shares and securities pricing in Nigerian commercial banks.

By model specification applied to the data obtained from the commercial banks used as represented by All Share Index (asi),  $Y = \beta_0 + \beta_1 X_1 + \mu$  such that profit =  $\beta_0 + \beta_1 \text{asi} + \mu$  and the linear regression line  $Y = \beta_0 + \beta_1 X$  with its respective standard errors is written (for the first commercial bank) profit = 523249.9 - 2101.111asi, S.E = (194367.50) (1804.663) and 't-statistic' = (2.692)(-1.164). The regression line shows that there is a negative relationship between profitability and All Share Index (asi) with slope of 523249.9, where  $R = 0.307$ ,  $R^2 = 0.094$  and  $F = 1.356$  with Durbin Watson = 1.054

By this result and within the neighborhood of the model specification above, Correlation Co-efficient (R) equals to 0.307 which depicts that the level of correlation between the commercial banks' profit and All Share Index of the industry during the period under review (1988 to 2007).

The Co-efficient of Multiple Determination ( $R^2$ ) or ('Goodness of fit') showed that the closer to one the value of  $R^2$  the better the 'Goodness of fit' and the closer the value to zero the value the worse of fit. Furthermore, the profitability and All Share Index is 0.094 which means that the 'goodness of fit' between the variable is up to 9.4 percent. By close reference to Durbin Watson (DW) test of ( $d^*$ -Statistics) of autocorrelation which states that where the value is in the range of 1.5 and 2.5 depicts positive autocorrelation. In this case, But the Durbin Watson (DW) test of commercial banks is 1.054 showing that there is evidence of auto correlation between the identified variables.

Similarly in commercial bank where profit = 8241.132+35.554asi, S.E = (4355.605) (40.441), 't' = (1.892) (0.879), the regression line showed that there is a positive relationship between profitability and All Share Index (asi) with slope of 8241.132, where  $R = 0.237$ ,  $R^2 = 0.056$ ,  $F = 0.773$  and Durbin Watson (DW) = 1.054. Here, the Correlation Co-efficient (R) of bank equal to 0.237 which means there is correlation between the profitability and All Share Index during the period of under review (1988-2007), and the Co-efficient of Multiple Determination ( $R^2$ ) is 0.056 showing that the 'Goodness of fit' between profitability and All share Index is 5.6 percent. The Durbin Watson (DW) analysis is 1.054 showing that there is evidence of auto correlation between the identified variables. Finding showed that there is relationship between banks profitability on shares and securities pricing in Nigerian commercial banks.

**H<sub>02</sub>:** There is no relationship between corporate governance practices on market price of shares and securities in Nigerian commercial banks

By model specification applied to the data obtained from the commercial banks used as represented by Dividend Per Share (dps) and shareholders' wealth represented by Return on Capital Employed (roce) = f(dps) and  $Y = \beta_0 + \beta_1 X + \mu$  with  $\text{roce} = \beta_0 + \beta_1 \text{dps} + \mu$ , the linear regression line  $Y = \beta_0 + \beta_1 X + \mu$  with its respective standard errors could now be written as first commercial bank's

$roce = 232420.96 + 423141.180dps + 682962.709$ , S.E = (262746.789) (743680.903), 't' = (0.885) (0.569),  $R = 0.133$ ,  $R^2 = 0.018$ ,  $F = 0.324$ , Standard Error = 682962.709 with Durbin Watson = 1.722.

Similarly,  $roce = 274405.217 - 679.346dps + 682962.709$ , S.E = (21040.559) (783.061), 't' = (13.042) (-0.868),  $R = 0.200$ ,  $R^2 = 0.040$ ,  $F = 0.753$ , Standard Error = 90532.735 with Durbin Watson = 1.297

Here the level of co-efficient of correlation (R) is 0.133 in first bank and second bank had 0.200 which means positive correlation existed between Dividend Per Share (dps) and Return on Capital Employed (roce) in period under review. That is 13.3 percent correlations exist in first bank and 20 percent in second bank. The Co-efficient of Multiple Determination ( $R^2$ ) which termed 'goodness of fit' in the first bank is  $R^2 = 0.018$  depicts a 'goodness of fit' of 1.8 percent, showing that only 1.8 percent changes in Dividend Per Share declared at the period could be attributed to Return on Capital Employed (ROCE). While in other bank the 'goodness of fit' was 0.040, that is 4 percent of the changes in Dividend Per Share (dps) in the bank could be attributed to return on Capital employed (roce) within the period under review. By criterion, Durbin Watson (DW) analysis for first bank is 1.722 and that of second bank is 1.297 which shows that there is evidence of positive auto correlation between the identified variables. This test shows that  $\beta_1$  (the slope of the regression line) is statistically significant and different from zero i.e.  $\beta_1 \neq 0$ . Hence, there is relationship between corporate governance practices on market price of shares and securities in Nigerian commercial banks.

## Discussions

Dividends continue to be the most important distribution mechanism with the similar policy of the two banks under review. Study found that relationship between banks profitability on shares and securities pricing in Nigerian commercial banks. This shows that those dividend policies of quoted banks are significantly influenced by their earnings and previous year dividends. Also, the reluctance to cut dividends makes banks to partially adjust their dividends to changes in their earnings with dividend policy having significant effect on shareholders' wealth. Furthermore, the average earning per share is the significant a determinant of Average dividend payment, which confirms the fact that the most important decision for payment of dividend is the current earning. However, the growth prospect and bank size has no impact on the dividend behavior of quoted banks for the period under review. Both current dividend and earnings per share explained the observed differential share market prices of the banks. The magnitude of the effect of earnings share market prices is greater than that of dividend payment suggested that the main determinant of market share value for banks is no longer dividend but earnings for recent data.

## Conclusion

Study showed that the average earnings per share is still the most significant determinant of average dividend payment in the commercial banks' operation though at variance to the magnitude of the impact of the earnings now greater than that of current dividend payment.

## Recommendations

As long as dividend remains an important determinant of share market prices means that banks may increase their share market price through an increase in the rate of dividend paid. In order words, there is sufficient empirical evidence to believe that a liberal dividend policy lead to a higher average market value of common stocks than penurious dividend policies. In effect banks' management should follow generous dividend policies which maximize the long term benefits to its stockholders. Banks should try all their possible best in improving their total earnings from each transaction year, since recent study reveals that it has greater impact than any other factor in determining the market share value for commercial banks from year to year. Apart, government

should assist in improving the quality and availability of secondary data of banks and make available for further research. Government should further encourage economic empowerment of the citizenry via consumption of locally produced goods, and assistance be given to exporters of locally produced goods through reduction in export duties. This helps the nation's economy in the medium or long run.

## References

- Conrad and Juttner (1973) Weak-form Efficiency in the Nigerian Stock Exchange, *African Review of Money Finance & Banking*, 1, 5-16
- Fama , Eugene (1965) The behaviour of Stocks Markets Prices. *Journal of Business*, 38 (34-45)
- Frennberg and Hansson (1993) Stating the Random Walk hypothesis on Swedish Stock Returns 1919-1990, *Scandinavian Economic History Review*, X2(1), 3-27
- Jagadeesh (1990) Evidence of Predictable behaviour of Security Returns, *The Journal of Finance*, 45(3), 881-898
- Pearce, Douglas and Roley (1983) The Reaction of Stock prices to unanticipated changes in money. *Journal of Finance-American Finance*, 38(4), 1323-1333
- Scholes (1972) 'The market for securities: substitution versus price pressure and the effects of Information on share prices. *The Journal of Business*, University of Chicago Press, Vol 45(2), 179-211.
- Yohannes and Lulseged (1997) Efficiency of Emerging Financial Markets-The Case of Nigeria, First Edition, *Nationale Kononuska Institution, HandelShogskolang Goteborge Universite*

# **Constraints to Pig Farmers' Participation in Food Production As Occasioned By the Devastating Flood In Isoko North Local Government Area Of Delta State, Nigeria.**

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## **Abstract**

This study examined the constraints to pig farmers' participation in food production as occasioned by the recent devastating flood in Isoko North Local Government Area of Delta State, Nigeria. Primary data were obtained for the study. Purposive random sampling technique was adopted to select 40 pig farmers. Questionnaire on a five-point Likert scale was used for collecting the data. The structured questionnaires were also used for the interview schedule. The data were analyzed using descriptive statistics of frequency, percentages and mean scores with bench mark of 3.00. It was revealed that 65% of the pig farmers were between the age range of 40-50 years. Majority (75.0%) of the pig farmers were operating on small scale with stock sizes of between 1 – 30 pigs. The major constraints identified were serious economic losses of pigs to the ravaging flood, insufficient capital and lack of access to finance, lack of storage facilities and problems of processing. Enhancement measures to the constraints identified were the need for the provision of credit facilities, a good standard storage and efficient facilities for processing and marketing. It was recommended among others that food self sufficiency and aggressive policy for pig development be formulated. The Government should carry out intensive multiplication of improved breeds of piglets for sales and distribution to affected pig farmers displaced by the recent flood at a subsidized rate in order to beef up the low protein intake of Nigerians.

**Keywords:** Food production, Farmers, capital, storage facilities, processing, pig

## Introduction

In 2012, there was the emergence of the devastating flood of the coastal region as a result of oceans overflowing their boundaries especially in Delta State. This adversely affected developing pig industries and in which pork is popular and relished particularly in Isoko North Local Government Area and other southern parts that is not forbidden and affordable, has had serious economic implications. Pig is an important class of livestock. It provides lard and pork for daily protein requirements of livestock consumers, Daudu, et al [1]. The destruction of the pig farms in Isoko resulting from the flood has led to shortage of pork. Pork provides protein of high biological values. Such protein is needed to prevent Protein Energy Malnutrition which is very common in the area of study

The supply of animal protein to an average Nigerian, especially the low income and none wage earners can be increased by paying attention to pig production Nwangwu, et al [2]. Imonikebe [3] stated that one of the viable routes to achieving the millennium development goals of ensuring food security is through the development of the livestock sub-sector. Pig production forms an important segment of Nigeria's livestock sub-sector, as a provider of opportunities for reducing poverty, food insecurity and offers a productive base for the rural farmers, with a secured economy. West [4] pointed out that the problem of livestock in developing countries are becoming more severe as population increases, demand is growing and production system still remains affected by socio-economic and biological constraints.

Makinde et al [5] observed that many people who engage in pig farming are within the age range of 41 – 50 years. They noted that many farmers within this age range often combine pig farming with regular job. There are many problems in animal production in Nigeria.

One of the problems of pig farming is insufficient capital. Oni and Yusuf [6] found that many livestock producers lack sufficient fund to expand existing farms or start new ones. They also commented on the fact that livestock production is highly capital intensive.

One of the problems in animal production is the possibility of natural disasters such as flood. Abo [7] reported that huge economic losses are recorded in food production as a result of climate changes. It was also stated that experts on environment and ecology blame the occurrence of flooding on poor planning and management of the drainage and waters.

The Problem of lack of finance is very serious. Ngoka [8] noted that livestock production is very expensive and requires huge capital outlay and recurrent expenditure. The problem of lack of processing facilities could occur in livestock production. Imonikebe [3] reported that lack of processing facilities is one of the major constraints attacking livestock industry in Nigeria.

Diseases often affect livestock. Singh [9] reported that livestock farmers often suffer considerable economic losses due to emerging diseases. In addition to this Penrith [10] observed that some diseases such as African swine fever has serious implications particularly as there are no vaccines and effective drug treatment or cure.

One problem facing pig farmers is marketing. Nuru [11] observed that there is neither organized markets system nor information to show the trend of supply, demand and current prices in livestock marketing.

The study therefore aims at determining those constraints that affect Isoko North Local Government Area in a piggery production, describes the socio-economic characteristics and the degree of constraints and makes recommendations based on the findings.

## Materials and Methods

Delta State is located in the South-South Region of Nigeria, between longitude 5°00'E and 6°45'E of the Greenwich Meridian and Latitude 5°00'N and 6°30'N of the equator covering an area of 17698km<sup>2</sup> Delta State Agriculture Statistics and Information [12]. The data for the study were

mainly from primary sources. Five towns were randomly selected from 5 clans that made up the Local Government. These were Emevor, Ofagbe, Ozoro, Owhelogbo and Iyede. With the help of the informants, Extension Agents overseeing the various cells in the area, and the Assistant Chief Agricultural Officer, a list of pig farmers in each of the selected towns was compiled. Eight (8) pig farmers were randomly selected from each town to make a total of forty (40) pig farmers for the study.

### Analytical Procedure

A structured questionnaire and oral interview were used to collect data for the study. Data analysis involved descriptive statistics: frequency, percentages, mean. Part of the questionnaire was on a 5-point Likert scale to obtain the data on the problems and solutions to pig production in Isoko North Local Government Area. The 5-point scale is as follows:- Very serious (VS)(5), Serious (S)(4), moderately serious (MS)(3), not very serious (NVS)(2), not serious (NS)(1). For the solution, the 5-point scale is as follows: Very important (VI)(5), important (I)(4), slightly important (SI)(3), not very important (NVI)(2), not important (NI)(1)

Note that when  $x > 3$  shows that such factor is significant

- $x = 3$  shows that such factor is moderate
- $x < 3$  shows that such factor is insignificant.

### Results

**Table 1: Socio-economic characteristics of respondents**

Variables	Frequency	Percentage (%)
Age range of the farmers		
21-30 years	2	5
31-40 years	10	25
41-50 years	26	65
51 years and above	5	5
Total	40	100
Sex of the pig farmers		
Male	32	80
Female	8	20
Total	40	100
Educational level of the pig farmers		
No formal education	14	35
Primary education	6	15
Secondary education	8	20
Tertiary education	12	30
Total	40	100
Stock size		
1-30 pigs	30	75
31-40 pigs	6	15
41-50 pigs	2	5
51 pigs and above	2	5
Total	40	100

Source: Field survey 2012.

**Table 2: Constraints to pig farmers' participation in food production in Isoko North L.G.A.**

S/N	Constraints	VS	S	MS	NVS	NS	$\bar{X}$
1	Economic losses of total stocks due to devastating flood	32	4	4	-	-	4.7



2	Losses due to diseases	20	15	2	2	1	4.3
3	Lack of access to improved livestock extension services	18	10	8	2	2	4.0
	Inadequate capital	30	8	2	-	-	4.7
4	Lack of access to finance	19	16	2	2	1	4.2
5	Lack of storage facilities	22	14	4	-	-	4.5
	Inadequate improved production techniques	18	10	6	3	2	3.9
6	Insufficient attention of government to pig farmers	18	8	4	6	4	3.8
7	Problem of processing and marketing	24	8	6	2	0	4.4
8		28	4	2	2	2	4.2
9							

**Source:** Field survey 2012

**Key:** VS = very serious; S = serious; MS = moderately serious; NVS = Not very serious; NS = Not Serious

Table 2 shows that all the items 1 – 10 each has a mean above the cut off point of 3. This indicates that all the pig farmers regarded these as very serious problems they encounter in pig production in Isoko North Local Government Area of Delta State, Nigeria.

Table 3: Enhancement measures to pig farmers participation in food production in Isoko North Local Government Area in Delta State of Nigeria.

S/N	Enhancement measures	Very important	Important	Strongly important	Not very important	Not important	Mean X
1	Provision of credit facilities to pig farmers	35	3	2	-	-	4.83
2	Provision of standard storage facilities for processing and marketing	40	-	-	-	-	5.00
3	Educating pig farmers on how to prevent pig diseases	30	6	4	-	-	4.65
4	Encouraging pig farmers to join cooperative societies for ease of acquiring loans	39	1	-	-	-	4.98

Table 3 shows that each of the items 1 – 4 has a mean above the cutoff point of 3.00. This indicates that all of the items 1 – 4 are important enhancement measures to boost pig production in Isoko North Local Government Area in Delta State of Nigeria.

## Discussion of Results

The socio-economic characteristics of respondents are shown on Table I. It revealed that 65% of the pig farmers were within the age range of 41-50 years. This shows that large proportion of the pig farmers were advanced in age. This finding is in line with that of Makinde, et al (1994) who observed that it is at this age range that farmers combine pig farming with regular jobs or are retired from white collar jobs and now into pig farming to sustain themselves economically. It also reveals that 80% of the respondents were males, while 20% were females. This indicates that pig farming is a male dominated enterprise in the Isoko North Local Government Area. A large proportion of the pig farmers (65%) had one form of formal education or the other. About 35% had no formal education. This high level of illiteracy may have negative effect on the utilization of improved livestock techniques and innovations. The results also show that majority of the pig farmers (75%) had between 1 and 30 pigs. This indicates that majority of the pig farmers are still operating on a small scale of pig farming. This may be due to inadequate capital resource base to expand existing farms and to start new ones since livestock production is a high capital intensive venture, Oni and Yusuf [6]

Table 2 shows the major factors that are constraints to pig farmers' participation in food production in Isoko North Local Government Area. This includes economic losses of stocks due to the devastating flood. This finding agreed with Abo [7] reported that huge economic losses are recorded due to climatic changes and that experts on environment and ecology blame the occurrence of flooding on poor planning and management of the drainage and waters. Inadequate capital and lack of access to finance was a serious problem. Ngoka [8] stated that livestock is an expensive proposition and requires a high capital outlay and high recurrent expenditure. Lack of storage facilities was the problem of processing. Imonikebe [3] reported that lack of processing facilities, is one of the major constraints affecting livestock industry in Nigeria. Economic losses due to disease, Singh [9] stated that livestock farmers suffered considerable-economic losses due to emerging diseases. Penrith [10] also made similar observation that some diseases such as African swine fever has serious economic implications, particularly as there are no vaccines, effective drug treatment or cure.

Marketing of livestock is a problem. This finding is in conformity with Nuru [11] who observed that there are no organized markets system nor information to show the trend of supply, demand and current prices in livestock marketing. Lack of access to improved livestock extension services is a serious problem so is inadequate improved production techniques. This makes the pig farmers to continue using obsolete techniques which do not bring about high pig productivity. There is the problem of insufficient attention by the government to pig farmers. This problem does not encourage the pig farmers.

The enhancement measures to the constraints identified, were as follows: The pig farmers should be provided with credit facilities. They should be linked with microfinance banks and cooperative societies in order to have access to capital which can be used to increase their level of production. Provision of a good standard storage and efficient accessories for processing and marketing pork.

## Conclusion

The study identified the constraints to pig farmers' participation in food production, as occasioned by the devastating flooding in Isoko North Local Government Area of Delta State and some enhancement measures to the constraints were addressed. The government be more directed towards the development of the piggery industry in order to beef up the low protein in take of Nigerians.

### **Recommendations**

The government should carry out intensive multiplication of improved breeds of piglets (weaners) for subsequent sales and distribution of affected pig farmers who were displaced by the recent devastating flood, at subsidized rate, the farmers will in turn groom and fatten some for slaughter and sales to the public and use some for breeding purpose.

## References

- [1] Daudu, S.O., Kughur, P.G. and Biam, C.K. (2010) Adoption of Pig Production Technologies by farmers in Makurdi L.G.A. of Benue State Processing of the 44<sup>th</sup> Annual Conference of Agricultural Society of Nigeria “LAUTECH” 2010 pg. 471
- [2] Nwangwu, W.A. and Iheukwumere, F.C. (2010) Performance of Weaner Pigs fed Graded levels of Maize-Cob-Meal Based diets. Proceedings of the 44<sup>th</sup> Annual Conference of Agricultural Society of Nigeria. “LAUTECH” 2010.
- [3] Imonikebe, U.G. (2011) Constraints to Livestock farmers Involvement in Food Security and implications in Nigeria. International Journal of Agriculture, Vol. 3 Number 1, 2011. Pan-African Book Company. Pg 94-97
- [4] West, K.B. (1990) An overview of Livestock Production in Nigeria. A paper Presented at National Conference on Nigeria Livestock Industry and prospect.
- [5] Makinde, G.E.O. and Oladele O. Oladele (1994) Research Strategies for Development of Animal Production. World Animal Review. 72:9-19
- [6] Oni, O.A. and Yusuf, S.A. (1999). The Effects of Farmers’ Socio-Economic Characteristics on Livestock Production in Ibadan Metropolis Proceedings 4<sup>th</sup> Conf. Animal Sci. Assoc. Nigeria. 11TA Ibadan. Pg 248.
- [7] Abo, M.E. (2009). The Global Food Crisis, Causes, Palliative Measures and Solutions Proceedings of the 43<sup>rd</sup> Annual Conference of the Agricultural Soc. Of Nigeria pg. 42
- [8] Ngoka, D.A. (1997) Principle of Livestock Production in the tropics Alphabet Nigeria Publishers, Owerri-Nigeria.
- [9] Singh, R.A. (1990) Poultry Production. New Delhi.
- [10] Penrith, M.L. (1998) An Introduction to African Swine Fever (ASF) in Africa, Rome, Italy. FAO, pg 1-4.
- [11] Nuru, S. (1982) Problems and Prospects of the Nigerian Beef Industry. Proceedings of the National Conference on Beef Production, Kaduna, Nigeria. July 27-30, 1982 pg. 30-39
- [12] Delta State Agricultural Statistics, and Information (2000). Ministry of Agriculture and Natural Resources Delta State Government of Nigeria Asaba.

# The Environmental Resource-Based View and a Research on Environmental Orientation - Organizational Performance Relation<sup>1</sup>

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## Abstract

This study includes a review of the environmental resource-based view; and the results of a research which was conducted in the Middle and Eastern Black Sea region of Turkey. The research was conducted on small and medium sized enterprises (SME's) about the impacts of their bio-physical environmental orientations on their organizational performance. Equally, the relation between the environmental practices of firms and their environmental and organizational performances are given. Furthermore, the relation between perceived environmental performance and perceived organizational performance is evaluated. It is also discussed that how can the sub-topics of environmental resource-based view, such as reducing waste, product management, and sustainable development can be a source of competitive advantage as valuable, rare, and inimitable elements. At the same time, the research is related with organizational strategy, because it was investigated and discussed in the study that, whether SME's added their environmental concerns and practices into their planning or not. The results of the data analysis do not support the hypothesis that there is a relationship between the levels of environmental practices or the inclusion of the bio-physical environmental concerns by written or acting strategic plans and organizational performance.

**Key Words:** Environmental resource-based view, SME's, organizational performance, environmental performance.

**Jel Codes:** H23, L72, M14, N5, Q5

## Introduction

This study includes literature review on the environmental resource-based view; and the results of a research which was conducted in small and medium sized enterprises (SME's) in the

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<sup>1</sup> This study was presented at the 20<sup>th</sup> National Management and Organization Congress at May 24-26, 2012, Izmir, Turkey; and published in it's the proceedings book as an extended abstract in Turkish.

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Middle and Eastern Black Sea region of Turkey, about the impacts of the bio-physical environmental orientations on organizational performance. In the study, first, the content of environmental resource-based view and the hypothesis of the research will be given. Second, the methodology of the study will be presented. Then, the results of the research will be explained; and finally, all the findings will be concluded.

### **Literature Review**

It is known that, the concerns and developments on natural environment are widely discussed, analysed. It is called as bio-physical environmental issue in the related international literature. Human has a significant impact on the natural environment both as an individual and as a member of an organization. The environmentalist approach of business life requires the integration of environmental concern into decision making and strategic planning processes. It is clear that; bio-physical environment has large effects on organizations. Therefore, corporations should analyse the relation of organization-natural environment in the wright way and should identify the basical characteristics of this relationship. Banerjee (1999; 2002b) states that, if a firm has activities to respond environmental concern, integrate this issue with its business strategy, this can be evaluated as a new situation which potentially can change traditional thinking in organizations. In an organizational structure like this, a new approach for efficiency might occur, and the relation of business with its stakeholders will be reshaped.

Banerjee (2001a, 2002a) found that environmental concern was a two-dimensional construct: internal concern and external concern. Internal concern is the level of inherent concern a person has for the environment, which includes its personal relevance, interest in environmental issues; worrying about environmental pollution, feeling a nature of connectedness with the nature, and caring about the environment. External concern is about benefits of consumer products oppose to pollution, effect of environmental regulation on industry, and economic trade-offs (Banerjee, 2001a: 49-50; Banerjee, 2002a: 111). Banerjee (2001a) explored that the correlation between internal environmental concern and environmental behavior was significantly higher than between external environmental concern and behavior. Banerjee (2002a) discusses the emergence of environmental issues and their implications for strategy, and also describes the theoretical and practical implications of integrating environmental and social issues into corporate strategies. Banerjee (2002b) reviewed the related literature on corporate environmentalism or environmental strategy and revealed the results of a research which was conducted on 911 firms. Scholar found that there was a significant relationship between industry and corporate environmental orientation and corporate strategy focus. Results from 311 firms implied that there were significant differences in how internal and external factors influenced corporate environmentalism. Regulatory, public concern and top management commitment were all found to be positive integrated with corporate environmentalism. It was also presented that; industry factors moderated the relation between corporate environmentalism and its antecedents with firms's high-impact industries showing higher levels of corporate environmentalism. Banerjee (2001b) focused on findings of a research reflecting functional aspects and influence on environmental orientation and environmental strategy focus, which presents significant expected differences among organizational levels, as managerial perceptions of corporate environmentalism. Banerjee (2001b) examined; internal constituencies, external constituencies; and explored that, firms' behaviors are in a range of entering new markets for environmentally friendly technologies, divesting from high environmental impact industries, investing in cleaner technologies, and preventing pollution. In that study, it was found that; integration of environmental issues is the key to a comprehensive environmental strategy; and managerial perceptions of legislation, competitive advantage, public concern and top management commitment appear to have some association with environmental strategies in some firms. One of the major challenges in environmental management is to develop reliable and valid measures of environmental performance; and the criteria for such performance should be based on the actual environmental impact of the firm

both upstream and downstream: its products, processes, raw material usage, energy usage, waste generation, packaging, suppliers, and distribution (Banerjee, 2001b: 508-510).

Furthermore, Judge Jr, and Douglas (1998) examined the integration of biophysical environmental issue into the strategic management process from a natural-resources-based view. Judge Jr, and Douglas (1998) tested the assumption that; “firms that have better developed the capability of integrating environmental issues into the strategic planning process will yield superior financial and social outcomes” (Judge Jr, and Douglas, 1998: 243). And their all hypothesis were supported by the results; in terms of, firms in high-impact industries have significantly greater levels of environmental orientation and environmental strategy focus; the level integration of environmental issues into the strategic planning process is positively related with the environmental performance of the firm, there is positive between relationship between “the level of resources provided” to environmental issues and the level of integration of environmental issues into the strategic planning process, and “there will be a positive relationship between the degree of functional coverage of natural environmental issues and the level of integration of environmental issues into the strategic planning process” (Judge Jr, and Douglas, 1998: 250-255). Scholars also stated that results of that study present the feasibility of competitive advantage through environmental activities as a reflection of the natural resource-based view.

Hart (1995) presented the natural resource-based view of the firm, as a pioneer of the topic that offers a theory of competitive advantage structured on firm’s attitudes related with biophysical environment. Hart (1995) identified three interconnected environmental strategies that could lead the firm to a competitive advantage: pollution prevention, product stewardship, and sustainable development.

The environmental resource-based view searches the environmental actions of firms as a strategic subject, providing new opportunities, but also includes threats. This approach is basically presented to literature by Hart (1995). Accordingly, in the frame of the environmental resource-based view, it is presumed that, understanding, defining, managing, and evaluating the limits of natural resources would provide sustainable competitive advantage in the long term, to firms. In other words, bio-physical environment has a potential to create new skills, abilities or opportunities for firms (Hart, 1995; Banerjee, 2002b:180). Hart (1995) pointed out that, the prevention of environmental pollution or the reduction of waste can be a strategic ability with minimizing waste. Furthermore, Hart (1995: 993-994) added that, firms can improve their relations with their shareholders, integrate with them; or have a general positive public image by developing pro-environmental capabilities; and by this way, these organizations can easily achieve a competitive advantage. So, preventing pollution, developing environmentally friendly products, or product stewardship, and the sustainable development can be the source of competitive advantage.

Hart (1995: 992) states that, the minimization of pollution can be made in two ways: control and prevention. Control can be implemented through collecting, processing, and throwing waste to prevent pollution. Prevention can be realised through the efficient usage of matters, substitution of goods, recycle, reuse, and the minimization of waste with process innovation. The environmental sensitivity in developing new products includes the minimization of unrenewable materials in goods, stopping the usage of toxic matters, and the usage of reusable, recyclable and low environmental impact raw materials. Sustainability requires developing environmentally friendly technologies and using them continuously. At this point, organizations should consider long term and competitive advantage as well as short term profitability and growth (Hart, 1995: 994-1002).

Another term presented by scholars (e.g. Judge Jr, and Douglas, 1998: 246) is the “resource bundle”, which implies “the unique combination of organizational resources”, also was alleged that it significantly affects the performance level of any firm. “Resource bundle” is seen as “invisible assets” and defined as “an integration of individual functional capabilities” at the corporate level (Grant, 1991, p.121, Amit and Schoemaker, 1993; Judge Jr, and Douglas, 1998: 246). It was

presented that the effectiveness of the capability bases upon both the level of resources and the resource of configuration (Black and Boal, 1994; Judge Jr, and Douglas, 1998: 246). The “degree of functional integration” reflects the respond of strategic planning process to different functional requirements (Judge Jr, and Douglas, 1998: 247). As Ramanujam et al. (1986) stated “the degree of functional integration” is the second important element for an effective strategic planning process. Judge Jr, and Douglas, (1998: 247) discusses that “the more that environmental issues are integrated into the various functional areas, the more that environmental issues will be integrated into the strategic planning process due to the superior cross-functional communication and information flow that exists”. Judge Jr, and Douglas (1998: 255) also found that “There is a positive relationship between the degree of functional coverage of natural environmental issues and the level of integration of environmental issues into the strategic planning process”.

In general, environmentalist behaviours can lead firms to the position of competitive advantage. When organizations integrate their bio-physical environmental approaches with organizational strategy, they can gain a valuable, rare, and not easily imitated organizational capability (Hart, 1995; Judge Jr, and Douglas, 1998: 243). Accordingly, if firms could develop special styles for bio-physical environmental approach and organizational strategy integration and for methods and processes which are used, then the potential of competitive advantage depending to these, would increase.

If the methods and technologies that are being used by firms in preventing pollution, reducing waste, or recycling; and their skills and abilities, or expertise on developing environmentally friendly, renewable, or recyclable products; and the strategies and practices of firms on sustainable development include valuable, rare, and not easily imitated competencies, then these all can be the source of competitive advantage.

The integration of concern for natural environment into the strategic plans of firms would facilitate to achieve purposes for them. At the same time, this will be an indication of organizational success and excellence. It will be a realistic approach to expect to respond social responsibilities in a sophisticated way from firms which are successful and have a complicated organizational structure. This type of organizations can easily comprehend the significance of biophysical environment for businesses, reflect sensitivity to their practices. Accordingly, it can be claimed that:

H1: There is a statistically significant and positive relationship between the level of environmental practices and organizational performance.

Multi dimensional plannings and implementations, the change and advance of organizational culture through current developments will contribute to the increase of organizational performance and to sustain it at that level. The awareness for how vital the biophysical environment is for human and civilization would lead firms to behave in a respectful line to the nature. In other words, the firms which have an environmentally friendly view for business will reflect their sensitivity to their written or acting strategies.

Judge Jr, and Douglas (1998) tested the assumption that; “firms that have better developed the capability of integrating environmental issues into the strategic planning process will yield superior financial and social outcomes” (Judge Jr, and Douglas, 1998: 243). Judge Jr, and Douglas, (1998) found that there is a positive relationship between the level integration of environmental issues into the strategic planning process and the financial performances of the firm. Accordingly, it can be proposed that:

H2: The integration of environmental concern of SME’s into their strategic plans will be positively and significantly correlated with their organizational performance.

There should be a correlation between the environmental performances and organizational performances of firms. In general, it is realistic to estimate that successful firms would have an environmental unit in their sophisticated, developed institutional structure, which reflects and



implements environmental concern. The performance of an organization is the sum of functional performances. In other words, if a firm is successful in the market, in its operations then it can be expected from that organization to succeed in reflecting environmental concern to practice. Hence, it can be asserted that:

H3: Environmental performance is positively associated with organizational performance in SME's.

Industry is one of the major factors that affect firms' attitudes where to focus on. Industry is also a determining variable in terms of setting facilities to reduce waste or harm to environment. Firms operating at the industries of petroleum, chemistry, construction, textile, and mining are expected to be more sensitive to environmental issues because of their high potential to pollute the natural environment. Therefore these firms should have more investments on environment in terms of facilities to prevent pollution and reduce waste. All of these actions should be based on an environmental orientation together with an environmental strategy and both integrated with organizational strategy.

Some specific industries should have more systematic and planned practices for protecting natural environment. This is essential to prevent the physical damage that can be caused by these kinds of firms. For instance, if chemical industry firms integrate their natural environmental concerns and tangible precautionary measures to their short, middle and long term planning; and if they realise these then they will have good relations with society and state. This type of behaviour will save them from any type of punishments and or passive sanctions (e.g. not to demand its goods). Furthermore, their public image will be improved by this way; and finally, they might be more successful.

Banerjee (2002b: 187), found that firms in chemicals and utilities industries had higher mean scores on environmental orientation and environmental strategy. Firms in highly regulated industries such as chemicals and utilities have more environmental orientation and strategy focus than the firms in other industries. Also service industries, which are relatively less regulated, had lowest levels of corporate environmentalism. There were no significant differences in environmental orientation or strategy focus between industries such as manufacturing, foods, pharmaceuticals, and consumer products.

Banerjee (2002b: 187), also found that chemical, utility, pharmaceutical, and consumer product firms all had means significantly higher than the sample mean for internal environmental orientation.

So, there is a high possibility to reach a significant positive relationship between industry and environmental orientation. Therefore, it can be proposed that:

H4: The environmental implementations and orientations of firms differentiate from sector to sector.



**Figure 1: A model for competitive advantage which depends on the environmental competency.**

## Methodology

The research was conducted in the Organized Industrial Areas of Samsun, Ordu, Giresun, Trabzon, and Fatsa in the Middle and Eastern Black Sea region of Turkey in March and April 2012. The sample consisted of 60 SME's, which all data were taken from with a survey form. Accordingly, complex questions were asked to identify each variable. A Likert type scale was used to identify the

data. The statistical analysis was realised with SPSS 19 package programme. The scale that was used in survey forms was adapted from international literature. Accordingly, writer benefited the studies of Banarjee (2002b; 2001c) and Judge and Douglas (1998).

In the study, the hypotheses were tested with correlation analysis. In addition, a non-parametric statistical test was used to analyse the data. The basical variables of the research were environmental orientation, environmental strategy, manufacturing focus, and the presence of a valuable and rare method which is special to that firm, existence of a special expertise, environmental performance, and organizational performance.

The content of the sample were as follows: nineteen (32%) of the firms were form manufacturing sector which operate in different sub sectors, five (8 %) of them were chemistry firms, seven (12 %) of them were operating in textile industry, fifteen (25%) of them were food sector firms (approximate rates). In addition there were five (8 %) construction, six (10 %) machine manufacturing and finally three (5 %) iron-steel firms. They were founded between the years of 1940 and 2011. 71.7% of them were established before the year 2000. The area and the number of establishments are Samsun (28; 46%), Ordu (14; 23%), Trabzon (7; 11%), Giresun (6; 10%), and finally Fatsa (5; 8%). They were all Turkish private sector firms. The numbers of employees were changing between 25 and 240.

## Results

The correlation values for basical variables were shown at Table 1. Accordingly, the results for the hypotheses are given below:

The first hypothesis which was claiming the presence of a statistically significant and positive relationship between the level of environmental practices and organizational performance was not supported by the correlation results. In other words H1 was rejected. Similarly, the results reveals that the integration of environmental concern of SME's into their strategic plans did not positively and significantly correlated with their organizational performance. So, H2 was also not accepted. Furthermore, the statistical results demonstrate that environmental performance is positively associated organizational performance. Therefore, H3 was accepted. Finally, the hypothesis which claims that the environmental implementations and orientations of firms change from sector to sector was also not verified. The non-parametric Friedman test was used to assess this hypothesis. There were no differences among sectoral means (.064>.05). Therefore, H4 was untrue.

**Table 1 Correlation among Basical Variables**

Variable	Mean	Std. Dev.	1	2	3	4	5	6	7
1. Env. Orientation	2.683	1.501	1						
2. Env. Strategy	2.316	1.383	.759**	1					
3. Prod. Focus	1.966	1.604	.460**	.325*	1				
4. Supeior Managment	1.850	1.866	.406**	.471**	.457**	1			
5. Expertise	1.650	1.424	.344**	.410**	.462**	.662**	1		
6. Env. Performance	3.166	0.977	.395**	.324*	.414**	.404**	.457*	1	
7. Org. Performance	3.716	1.208	0,15	.065	.126	.101	.178	.600**	1

\*\*Correlation is significant at 0.01 levels. \* Correlation is significant at 0.05 levels. N=60

In general, the enterprises in the content of the sample are successful organizations, which are targeting both domestic and international markets. They adapted themselves to their business

environment, maintaining their works for many years, so they are strong establishments. However, these foundations' approach to natural environmental issue through responding legal necessities, or in other words avoiding sanctions. Therefore, the means of answers for environmental practices scale is low. Although the perceived organizational performance levels are high, the natural environmental orientation does not move in a correlation with these levels, because environmental implementations are realised in a low level. Moreover, the absence of positive and significant correlation between the integration of sensitiveness for natural environment into written or acting business strategy and organizational performance can be explained similarly.

The correlated significant relation between perceived organizational performance and perceived environmental performance is important; because it shows how consistent the related statements are. This result is also significant for: the firms which have low level of or limited environmental orientation or practices see or perceive environmental performance as responding legal necessities or avoiding consumer sanctions. So they stated a high level perception of environmental performance.

The higher organizational performance was supported by the practices and current positions of firms. The 71.7% of these firms were founded before the year 2000; so it can be said that they adapted themselves to competition at markets. A significant proportion of these firms which manufacture high quality goods or present advanced level services, have competitive advantage, especially in domestic markets, in Turkey. This competitive advantage is very clear for these firms which are operating in industries such as machine manufacturing, health equipments, food production depending on hazelnut.

The rejection for the hypothesis claiming that environmental implementations and orientations of firms differentiate from sector to sector can be related with the scale of these establishments. These are small and medium sized organizations, therefore they have similar practices. That small and medium sized scale limits the diversity in organizational, managerial, and social implementations. In other words, the absence of complexity makes firms become closer in terms of practices.

As it can be seen at Table 1, there are positive and significant correlations between environmental orientation and some variables such as: the existence of an environmental strategy (.759; 0.01); presence of recycling (.460; 0.01); the value, uniqueness, or superiority of methods and technology used for preventing pollution, or in recycling (.406; 0.01); existence of valuable, rare, or special skills and abilities in developing environmentally friendly, renewable or recyclable products (.344; 0.01); and finally, perceived environmental performance (.395; 0.01). These results are important, because they reflect the internal harmony of scale and the consistency of answers for survey questions.

It also can be seen from the Table 1 that, the means of answers taken for questions or the means of variables are low. This is the reflection of the situation that, the firms in the content of the sample, that were founded in the Organized Industrial Areas of the Central and Eastern Black Sea region of Turkey take the environmental issue in general, as implementations that are directed by legal requirements. To put it more simply, many firms don't take it as a strategic issue.

## **Discussion**

During the research period it was observed that the state initiative is the most important element in the environmental practices of business enterprises. The law, regulations and control system direct firms in their environmental actions. This demonstrates how important and essential a state initiative and guidance is. The Turkish State or The Ministry of Environmental Affairs sets up new rules or updates them. The ministry has established an effective controlling system. If any firm do not respond the legal requirements, it faces significant sanctions.

Some firms focus on preventing the pollution of water by refining or purifying it. At the same time, recollecting and recycling of waste and decomposing it. The methods used in recycling can be called as ability. The firms, which focus on efficiency, also use less paper in office. Moreover, they buy waste plastics and produce new goods from them. Besides, there are attempts to reduce grease coming from machine. Also, as a green marketing practice, raw material that is used in packaging is reduced by a few establishments. Waste is also can be used as fertilizer. Equally, it can be a source of fuel. It is expressed by some firms that recycling, both contributes to environment and increases efficiency in their organizations. For instance, every piece of cloth reused in textile industry. Similarly, waste paper can be recycled and reused such as wrapping (packing) by different business enterprises.

Metal waste was in the minimum level in the area. It was witnessed that some firms give their liquid waste to the sewer system. For example, detergents are given to this system, and it should be stopped with the construction of an adequate infrastructure. In connection with this, wastage is being sent to producer. Therefore, some firms transfer their waste to Istanbul, and recycle it there. All of the firms in the sample are environmental tax payers of municipality. The administrators of firms are all aware of the importance of minimizing the damage of chemicals; so costs will be minimized. Some sectors, such as construction don't have a system to recycle its waste, and some firms spilling out them to sea. However, it was also expressed by some enterprises that, if recycled matter being used as raw material, then the quality of products will decrease. There are environmental consultancy firms in the region as in all country. In addition, natural gas usage is becoming more common in the region, which is more profitable and harmless. Furthermore, some firms put it as a priority to inform employees about environmental issues and gain their participation and support.

There are many firms operating in hazelnut industry in the Central and Eastern Black Sea region of Turkey. In this sector, the most important loss is the wastage that is mixed with air. There is an example for high level of innovation that results in increased efficiency in the sector. This technique, which includes an efficient chimney filter system, minimizes manufacturing costs; and creates maximum efficiency from hazelnut shell burning, which is used as a source of energy. In connection with this, many factories burn hazelnut shell in Anatolia. On the whole, shell trade has established a new sector in some parts of Turkey. At the same time, burning hazelnut shell contributes reducing energy importation of Turkey. The system for this, results in zero gas emission. With an efficient chimney, fuel consumption might decrease 70%; but even more obtained in hazelnut industry by a firm with this system. This was concreted as "thermoblock heat technology". The system was imitated or transferred by some other enterprises. Above all, every part of hazelnut can be used in industry. For example the green outer covering can be transformed to fertilizer.

The exporter firms should be more sensitive to environmental issues. Their external partners and the states in foreign markets demand from exporters to respond the universal environmental standards. For instance, cooperation with a Swedish firm facilitates to prevent Turkish firm to use some kind of chemicals as stain remover sprays. On the other hand, the environmental standards and practices in Turkey are achieving the universal levels in general. Accordingly, the environmentally friendly infrastructure is being improved rapidly.

In general, the way of dealing environmental issues can be a source of competitive advantage. Therefore, value, rareness, inimitability of environmentally friendly methods that are used by firms might allow being superior to their rivals. In other words, when the efficiency increases, the profitability also increases.

## **Conclusion**

This study has investigated the relation between valuable, rare, and not easily imitated skills, abilities, and expertise that SME's have on developing environmentally friendly, renewable, or recyclable products; and the strategies and practices of firms on sustainable development and organizational performance; and, has shown that there is no significant and positive correlation

between these two types of variables except one. On the other hand, it was shown that, the environmental performances of firms are positively and significantly correlated with organizational performances. Furthermore, the results of this research do not support the idea that the integration of environmental concern of SME's into their strategic plans will be positively and significantly correlated with their organizational performance.

This study, which also includes a review of the natural resource-based view, has demonstrated that the environmental orientation level is low among the enterprises in the frame of the sample, which were founded in the Organized Industrial Areas of the Central and Eastern Black Sea region in Turkey. Moreover, it was also found that, the proportion of firms which integrated their environmental concern into their written or acting strategies low too. In addition, there are just a few enterprises that have valuable, rare, or firm special environmental skills and abilities, and these are not positively and significantly associated with their organizational performances according to the results of statistical analysis. Despite this, when the author communicated them face to face, this type of firms told they had won a lot through efficient environmental practices. In general, environmentally friendly implementations result in a more efficient organization and many firms aware of this reality; but don't have so many practices towards this, perhaps because of the characteristics of their sectors. In general, today, the Turkish society and Turkish firms are becoming more sensitive for environmental issues.

The basic source of environmental practices of the firms which are in the frame of the sample is the legal responsibilities. Furthermore, it was seen that, the organizations which collaborate with European firms have significantly higher environmental sensitivity than the others. In this case, the concerns about breaking contracts, ending collaborations, and losing commercial or financial advantages become more functional. The European firms demand from their Turkish partner to obey the rules or standards which are essential in European Union in manufacturing. In other words, the contents and the production procedure of goods should be adapted to the framework used in European Union. On the other hand, environmentally friendly infrastructure and low becoming more sophisticated day by day in Turkey. The sensitivity of state and society increases; so practices are achieving the global standards. However, more efforts are needed to improve collect and reuse, recycle systems, especially from municipalities. This type of movement will increase efficiency in all areas of life and sectors, so, the speed of the growth rate of country will also gain acceleration.

The environmental resource-based view focuses on valuable, unique or rare, and not easily imitated methods and technologies in preventing pollution, reducing waste, and recycling in organizations. Same characteristics can also be seen in abilities and expertise in developing environmentally friendly, renewable, and recyclable products. Equally, similar qualities can be looked for in strategies and implementations in sustainable development. In the context of this research, there were just a few enterprises were seen to possess these type of qualities. A hazelnut firm in Giresun, which invented a technology for efficient energy usage, also minimized the polluted air given out from its chimney. This firm have a very high level of organizational performance; and known as creative, innovative, so as a result highly profitable and a respectful organization. Similarly, it was learned that, a few more enterprises have developed unique methods for environmental issues, especially in reducing waste and recycling. Thus, or related with this situation they have high level of performance. However, the number of firms which has this type of qualities was not so many in the sample; so this circumstance prevented a possible positive and significant relation between environmental superior ability and organizational performance in correlation analysis. It was observed that valuable, rare environmental ability can be a source of competitive advantage.

Future research should focus on again the relation between organizational performances and, environmental orientations, the integration of environmental concerns to business strategy, providing employee participation or contribution to the process, considering the environmental issue in designing, manufacturing and marketing processes. In addition, further researches should be

conducted in large firms to investigate relation between similar variables mentioned above. Finally, to check and strengthen any result in any research, findings should be compared with official statistics.

## References

- Abreu, Monica C. S. (2009). How to Define an Environmental Policy to Improve Corporate Sustainability in Developing Countries. *Business Strategy and the Environment*, 18, 542-556.
- Albino, V., Balice, A., Dangelico, R. M. (2009). Environmental Strategies and Green Product Development: an Overview on Sustainability-Driven Companies. *Business Strategy and the Environment*, 18, 83-96.
- Aragon-Correa, J. A., Rubio-Lopez, E. A. (2007). Proactive Corporate Environmental Strategies: Myths and Misunderstandings. *Long Range Planning*, 40, 357-381.
- Aragon-Correa, J. A., Hurtado-Torres, N., Sharma, S. ve Garcia-Morales, V. J. (2008). Environmental Strategy and Performance in Small Firms: A Resource-based Perspective. *Journal of Environmental Management*, 86, 88-103.
- Banarjee, S. B. (2001a). Managerial Environmental Attitudes and Corporate Environmentalism: A Preliminary Investigation. *Journal of Environmental Education*, 32(4), 49-50.
- Banarjee, S. B. (2001b). Managerial Perceptions of Corporate Environmentalism: Interpretations From Industry and Strategic Implications For Organizations. *Journal of Management Studies*, 38(4), 489-513.
- Banarjee, S. B. (2001c). "Corporate Environmental Strategies and Actions". *Management Decision*, 39(1), 36-44.
- Banarjee, S. B. (2002a). Organizational Strategies for Sustainable Development: Developing A Research Agenda for the New Millennium. *Australian Journal of Management*, 27(Special Issue), 105-117.
- Banarjee, S. B. (2002b). Corporate Environmentalism: The Construct and Its Measurement". *Journal of Business Research*, 55, 177-191.
- Banarjee, S. B. (2003). Who Sustains Whose Development? Sustainable Development and the Reinvention of Nature. *Organization Studies*, 24(1), 143-180.
- Da Silva, R. V., Teixeira, N. (2009). Environmental Business Strategy: the Portuguese Case. *Business Strategy and the Environment*, 17, 208-218.
- Gladwin, T. N., Kennelly, J. J., Krause, T. (1995). Shifting Paradigms For Sustainable Development: Implications for Management Theory and Research. *Academy of Management Review*, 20 (4) 874-907.
- Hart, S. L. (1995). A Natural-Resource-Based View of the Firm. *Academy of Management Review*, 20(4), 986-1014.
- Hart, S. L., Ahuja, G. (1996). Does it pay to Be Green? An Empirical Examination of the Relationship Between Emission Reduction and Firm Performance? *Business Strategy and the Environment*, 5, 30-37.
- Hutchinson, C. (1996). Integrating Environment Policy with Business Strategy. *Long Range Planning*, 29(1), 11-23.
- Judge, Jr., William Q, Douglas T. J. (1998). Performance Implications of Incorporating Natural Environmental Issues Into the Strategic Planning Process: An Empirical Assessment. *Journal of Management Studies*, 35 (2), 241-262.
- Li, N., Toppinen, A. (2011). Corporate Responsibility and Sustainable Competitive Advantage in Forest-based Industry: Complementary or Conflicting Goals? *Forest Policy and Economics*, 13: 113-123.
- Prahalad, C.K., Hamel, G. (1990), The Core Competence of the Corporation. *Harvard Business Review*, May-June, 78-90.

- Russo, M. V., Fouts, P. A. (1997). A Resource-Based Perspective on Corporate Environmental Performance and Profitability. *Academy of Management Journal*, 40(3), 534-559.
- Sandhu, S., Ozanne, L. K., Smallman, C., Cullen, R. (2010). Consumer Driven Corporate Environmentalism: Fact or Fiction? *Business Strategy and the Environment*, 19, 356-366.
- Schaefer, A. (2009). Corporate Greening and Changing Regulatory Regimes: the UK Water Industry". *Business Strategy and the Environment*, 18, 320-333.
- Sharma, S., Vredenburg, H. (1998). Proactive Corporate Environmental Strategy and the Development of Competitively Valuable Organizational Capabilities. *Strategic Management Journal*, 19, 729-753.
- Shrivastava, P. (1995a). Ecocentric Management for a Risk Society. *Academy of Management Review*, 20(1), 118-137.
- Shrivastava, P. (1995b). The Role of Corporations in Achieving Ecological Sustainability". *Academy of Management Review*, 20(4), 936-960.
- Soteriou, E. C., Coccossis, H. (2009). Integrating Sustainability into the Strategic Planning of National Tourism Organizations. *Journal of Travel Research*, 49(2), 191-205.
- Starik, M., Throop, G., M., Doody, J. R., Joyce, M. E. (1996). Growing an Environmental Strategy. *Business Strategy and the Environment*, 5, 12-21.
- Westley, F., Vredenburg, H. (1991). Strategic Bridging: The Collaboration between Environmentalists and Business in the Marketing of Green Products. *Journal of Applied Behavioural Science*, 27(1), 65-90.
- Wood, D. J. (1991). Corporate Social Performance Revisited. *Academy of Management Review*, 16(4), 691-718.



# A Review of Research on Interventions for Teaching Individuals with Asperger's Syndrome

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## **Abstract**

Asperger's Syndrome (AS) is defined as one of the subcategories of Autism Spectrum Disorders (ASD). When presented with effective interventions at early ages, individuals with AS display considerable levels of progress and continue to lead their lives independently to great extents. Accordingly, there is a need for new research examining the results of these interventions in that field, and for review studies. Therefore, the purpose of this review is to conduct content examination of studies that focused on interventions for individuals with AS between 1992 and 2011. All findings were discussed in respect to the relevant literature; there were suggestions for further research and interventions.

**Keywords** Asperger's Syndrome, Autism Spectrum Disorders, Quality Indicators, Review

## Introduction

Autism Spectrum Disorders (ASD) are pervasive developmental disorders characterized by sustained impairments in social-communication skills and restricted patterns of interest. Asperger's Syndrome (AS) is defined as a subcategory of ASD. Although the definition of AS started in 1944 with work by Hans Asperger and was continued in 1981 by Lorna Wing, the current diagnostic criteria for AS first appeared in 1992 in the World Health Organization's (WHO) tenth edition of International Classification of Diseases (ICD-10). Two years later, AS was defined in the American Psychiatric Association's Diagnostic and Statistical Manual IV [DSM-IV] (American Psychiatric Association, 2000; Wenzel & Rowley, 2010; World Health Organization, 1992; cited in Lee & Park, 2007, p. 134). According to the DSM-IV and DSM-V there are two main deficits of AS: one is impairment of social-communication skills, the other is a repetitive and restrictive stereotyped pattern of behavior and interest. These deficits make AS similar to autism. Despite these similarities, AS differs from autism because AS entails no delay in language development and no obvious impairments in cognitive skills. In addition to main deficits, academic, sensory-motor, and behavioral problems can be observed in individuals with AS (American Psychiatric Association, 2000, 2013; Stewart, Carr, & LeBlanc, 2007).

Individuals with AS can continue to live independently and to have professions with educational interventions that cover their main deficit fields at early ages. Notably, individuals with AS can maintain their educational lives in general education settings because they have no significant deficits in language development and cognitive functions. In this regard, it is obvious that interventions presented to these individuals aim to provide them with social abilities, to change their behaviors, and to support them in problematic development areas (Klin, McPartland, & Volkmar, 2005; Ozonoff, South, & Miller, 2000; Wenzel & Rowley, 2010). Although educational interventions play crucial roles in the development of individuals with AS, most research focuses on causes and epidemiology of AS in the disciplines of psychiatry and psychology. However, studies on effectiveness and efficiency of educational interventions for individuals with AS have great importance for practitioners and families because the studies may guide them through provision of high-quality educational services. These qualified educational services also facilitate important permanent progress in the development of individuals with AS. Although research on results of interventions has gained importance during the last decade and the numbers of research studies have increased in recent years, the field needs new studies (Castorina & Negri, 2011; Delano, 2007a; Sansosti & Powell-Smith, 2006). However, practitioners and families can face complications in reaching and/or following the research and interpreting its results. When this difficulty arises, review studies can help in managing the aforementioned hardship by compiling and presenting the knowledge in the relevant research. Therefore, the contribution of review studies plays a significant role in generalizing interventions that scientific research supports and enables the development of individuals with AS. Evaluation of the relevant literature shows that review studies about individuals with AS are quite limited. Literature on the following topics was reviewed within these limited studies: (a) social skills training interventions for individuals with AS and high-functioning autism (Denning, 2007); (b) the use of peer-mediated interventions (PMI) for autism, AS, and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS) (Chan, Lang, Rispoli, O'Reilly, Sigafos, & Cole, 2009); (c) research on the adaptive behavior (Lee & Park, 2007).

In sum, this study took place because of the limited review studies that examine practices in the field of AS. Therefore, the aim of this research was to conduct a review of studies on interventions for teaching individuals with AS. To achieve this goal, there was (a) content analysis of studies and (b) investigation via quality indicators of the studies' methodological quality. This review study, which examines studies on educational interventions concerning individuals with AS from a wide range of perspectives, is expected to guide practitioners and families through effective practices and thus contribute to development and improvement of individuals with AS. This study also will contribute to

the literature by indicating what points should be taken into account for future studies that are stronger and more valid in terms of content and methodology.

## Method

First, all three authors searched for articles that addressed interventions for the individuals with AS published between 1992 and 2011. The authors chose 1992 as their article search starting date because current diagnostic criteria of AS first appeared at that time (World Health Organization, 1992; cited in Lee & Park, 2007, p. 134). The article search took place on Internet electronic databases, starting with the EBSCOhost research site and employing Academic Search Complete, Behavioral Science Collection, ERIC, PsychINFO, Psychology and Behavioral Science Collection, and SocIndex. These keywords guided the database search: (a) interventions and AS, (b) treatments and AS, (c) educations and AS, (d) Asperger's syndrome, (e) trainings and AS, (f) reviews in AS. The authors also reviewed the bibliographies and references for each study to gather information on sources that the Internet search did not identify. Then, the authors used the same databases to access those sources.

After finishing this search procedure, the three authors reviewed the accessed articles, working independently of one another and in accordance with the following criteria: (a) publication in a peer-reviewed journal; (b) quantitative and qualitative research studies; (c) participants in the studies had been diagnosed only with AS and their diagnoses had been made under the criteria of DSM-IV, DSM-IV-TR, or ICD-10. The authors also accepted the presence of comorbid disorders such as Attention Deficit Hyperactivity Disorder (ADHD).

Once they completed their detailed inquiries, the authors decided that 32 articles met the aforementioned criteria, and then processed those articles with the same independent reading procedure used for the review's first stage. After completing the second round of readings, the first author argued that eleven of the 32 articles did not meet one or more of the determined criteria. As a group, all three authors examined the manuscripts in question and agreed that the eleven articles did not meet the determined criteria. Consequently, the authors started their content analysis with 21 studies in the context of this review study. Working independently of one another, the authors examined the articles within contexts of the parameters of authors, publication years, participants, settings, variables, research designs, interobserver agreement, procedural fidelity, maintenance, generalizations, social validity, and results. After completing this examination, all three authors reconvened and identified articles on which they could not agree, and then re-reviewed the articles while focusing on their disagreements. The authors applied the procedures mentioned above until they reached consensus on the parameters. During this process, experts who were "blind" to this research and authors of some articles on which authors of this research didn't agree were asked for advice. Upon completion of this process, only one parameter was not reached through compromise: research design of a study. Since this article's author could not be contacted, that article was omitted from the review. Lastly, the authors summarized content information pertinent to 20 articles included in the review's scope by transferring the content information to tables containing the aforementioned parameters. Table 1 includes general information relevant to the manuscripts; Table 2 presents information on quantitative research; Table 3 presents information about qualitative research. The researchers determined parameters of the table for content analysis in accordance with the relevant literature (Chan et al., 2009; Denning, 2007; Test, Fowler, Brewer, & Wood, 2005).

The first author also analyzed the methodological quality of the single-subject studies using form specifically prepared in accordance with the direction of relevant literature. This form addressed quality indicators for single-subject studies (Table 4) (Horner et al., 2005; Test et al., 2005). Most of the studies examined in review conducted with single-subject research design. Therefore, the methodological analysis conducted only for single-subject studies.

Within the content analysis, there were interobserver reliability measurements carried out for Table 2 and Table 3. These measurements were designed for quantitative and qualitative research. A

graduate student in the department of special education who was blind to this study coded five (30%) studies for interobserver reliability for quantitative research studies. There were seven items on the form for each study. A total of 35 items were checked. For reliability calculation, agreement between the two observers on the total number of items (35) was divided by the number of agreements plus disagreements (0), then multiplied by 100. Reliability was 100% for quantitative studies. A graduate student who was blind to the research coded one study (33%) for interobserver reliability for qualitative design. There were seven items on the form for the study. A total of seven items were checked. Reliability was determined by calculating the agreement between the observers on the number of items (six) divided by the number of agreements plus disagreements (1), then multiplied by 100. For qualitative studies, reliability was 86%.

For interobserver reliability and in accordance with methodological analysis, the second author coded four (29%) of 14 single-subject studies. There were 16 items identified as quality indicator items of single-subject design. The second author checked these items and determined differences between the first author and herself. Reliability was determined by calculating the agreement between the observers on the number of items (61) divided by the number of agreements plus disagreements (3), then multiplied by 100. Reliability for single subject design study was found to be 95%.

## **Results**

### **Content Findings**

#### **Participants and Settings**

There were 129 participants in the studies the authors examined. Of that number, 119 participants were male and ten were female. The authors observed that the participants in all studies were in the age range of 5 to 17 years, with most participants (88.46%) being 9 or 10 years of age. Furthermore, the authors determined that participants in four research studies (Bledsoe, Myles, & Simpson, 2003; Sofronoff et al., 2007; Stewart et al., 2007; Wilkinson, 2005) had ADHD as a comorbid disorder.

During investigation of intervention settings, the authors noticed that seven of the interventions took place in a school, two were administered in a home, four were conducted at a university, and three were administered in other settings (e.g., clinic). Moreover, two studies took place at school and at home simultaneously, one study was conducted at home and in a community setting, and another research study was administered at a clinic and at home.

#### **Experimental Design**

In terms of experimental design, 17 studies used a quantitative research designed model and 14 studies used single subject designs. Three studies used multiple baselines across settings (Bock, 2007a; Bock, 2007b; Myles, Ferguson, & Hagiwara, 2007), three studies used multiple baseline across responses (Delano, 2007a; Delano, 2007b; Scattone, 2008), two studies used multiple baseline across participants (Lang et al., 2008; Sansosti & Powell-Smith, 2006), three studies used AB (Bernad-Ripoll, 2007; Stewart et al., 2007; Wilkinson, 2005), one study used ABAB (Bledsoe et al., 2003), one study used ABACABAC (Shogren, Lang, Machalicek, Rispoli, & O'Reilly, 2011), and one study used changing criterion design (Cameron, Shapiro, & Ainsleigh, 2005). The other three quantitative studies conducted group experimental designs (Beaumont & Sofronoff, 2008; Lacava, Golan, Baron-Cohen, & Myles, 2007; Sofronoff et al., 2007). Lacava et al. (2007) used non-equivalent pre-test/post-test experimental group design. Beaumont et al. (2008) and Sofronoff et al. (2007) used group experimental design. The remaining three studies out of 20 were conducted with a qualitative research. All three of these studies used a case study (Choi & Nieminen, 2008; Cragar & Hoorvath, 2003; Rodger et al., 2009).

### **Dependent Variables/Research Aims**

The authors observed that dependent variables are social and communication skills in most quantitative research. Accordingly, ten studies evaluated effectiveness of specific treatments on social-communication skills. These included (a) social engagement, competence, and interaction skills (Beaumont & Sofronoff, 2008; Bock, 2007a; Bock, 2007b; Sansosti & Powell-Smith, 2006); (b) conversation skills (Scattone, 2008; Steward et al., 2007); classroom rules (Lang et al., 2008); and (c) emotional understanding and emotion regulation skills (e.g., anger management strategies) (Beaumont & Sofronoff, 2008; Bernad-Ripoll, 2007; Lacava et al., 2007; Sofronoff et al., 2007). One study examined appropriate classroom behaviors as social skills and academic engagement as an academic skill (Shogren et al., 2011). Some studies focused on educational goals. For example, four studies investigated effects of independent variables on academic skills including (a) homework recording (Myles et al., 2007), (b) writing skills (Delano, 2007a; Delano, 2007b), and (c) bicycle riding as an educational activity (Cameron, et al., 2005). One study was examined to develop appropriate lunchtime eating behaviors as dependent variables (Bledsoe et al., 2003). Another study assessed off-task and non-compliant behaviors as challenging behaviors (Wilkinson, 2005).

The research aims of the three qualitative studies were to describe the interventions and to report results of the interventions in relation to skills, which included (a) social and communication skills (Choi & Nieminen, 2008; Cragar & Horvath, 2003) and (b) motor skills (Rodger et al., 2009).

### **Independent Variables/Interventions**

The studies implemented various interventions to enhance the abilities of participants. In four studies, investigators used social story interventions to teach targeted skills of participants. Two of these studies designed individualized and social stories and used them during intervention (Bledsoe et al., 2003; Sansosti & Powell-Smith, 2006). Two of these studies combined social stories with video modeling for the purpose of increasing social-communication skills (Bernad-Ripoll, 2007; Scattone, 2008).

Four studies implemented different kinds of social skills training to develop children's social-communication skills of children. Cragar and Horvath (2003) used behavioral methods for training in these skills; their methods included direct instruction, feedback, modeling, reinforcement, and role-playing games. The other social skills training study consisted of multi-components: group social skills training, parent training, teacher handouts, and a computer game entitled "Junior Detective Training Program" (JDTD) (Beaumont & Sofronoff, 2008). Other types of multiple-component social skills training used incidental teaching as the basis for their designs. The incidental teaching used three activities: social stories, peer-modeling, and individual lessons (Choi & Nieminen, 2008). Steward et al. (2007) evaluated family-implemented social skills training based on Behavioral Skills Training (BST) for teaching social skills.

Two studies taught target skills by using assistive technology: computer software entitled Mind Reading: The Interactive Guide to Emotions™ (Lacava et al., 2007) and Personal Digital Assistant (Myles et al., 2007). One study applied Positive Behavioral Support (PBS) to teach bicycle riding as an educational activity (Cameron, et al., 2005). Two studies used a social-behavioral learning strategy intervention (Stop-Observe-Deliberate-Act, or SODA), which is a specific strategy for improving social interaction skills of children with AS (Bock, 2007a; Bock, 2007b). Two studies examined the evidence-based intervention known as Self-Regulated Strategy Development (SRSD), which involves specific strategies to improve writing skills of people with learning disabilities and AS (Delano, 2007a; Delano, 2007b). In one study intervention, investigators taught classroom rules to participants via video self-modeling (Lang et al., 2008).

Three studies based interventions on the Cognitive-Behavioral Approach. Sofronoff et al. (2007) conducted Cognitive Behavioral Intervention/Therapy (CBT) for emotion regulation skills. An effective intervention for mood disorders and emotional difficulties, CBT can include some of these components: assessment of the mood disorder's nature and degree, effective education,

cognitive restructuring, and stress management. The other study focused on a specific treatment package consisting of Conjoint Behavioral Consultation (CBC) and self-management intervention implemented in a mainstream education setting for challenging behaviors. The CBC incorporates problem-solving stages and objectives of the traditional behavioral consultation model for educational and behavioral problems through parents and teacher collaborations. This study applied the CBC model procedure and used self-assessment and self-recording as a self-management strategy during treatment implementation (Wilkinson, 2005). The third study applied Cognitive Orientation for Occupational Performance (CO-OP), a specific cognitive teaching approach that uses cognitive problem-solving strategies to develop motor skills (Rodger et al., 2009). The last study compared the token economy as teacher-directed intervention and self-management intervention as student-directed intervention as ways to develop appropriate classroom behavior and academic engagement (Shogren et al., 2011).

### **Results of Examining the Studies**

Results of the authors' examination of these studies indicate that the interventions had important outcomes for participants in all the studies and led to considerable progress for participants. In one study, the intervention was effective for two of the three participants (Sansosti & Powell-Smith, 2006). Another study showed no statistical difference among the groups in terms of emotion recognition, which was one of the three dependent variables (Beaumont & Sofronoff, 2008). Lastly, the intervention in the study by Scattone (2008) failed to be effective for smiling, which was one of the study's three target skills.

When considering generalization data in the studies under examination, the authors found that 12 studies had not collected such data. By contrast, eight studies did collect generalization data and only one of those studies did not generalize gains (Cragar & Horvath, 2003). The other seven studies showed that participants generalized the acquired skills to new settings or skills. Seven studies in this review study collected no maintenance data, but 13 studies did collect maintenance data were collected in the other 13 studies and the authors observed that participants could keep up with acquired outcomes in these studies.

### **Methodological Analysis Findings**

#### **Quality Indicators of Single Subject Studies**

Table 4 presents results of examination of quality indicators (Horner et al., 2005; Test et al., 2005) for 14 single subject studies. All these studies described participants and settings sufficiently. However, only ten studies described selection of participants sufficiently. According to the dependent variable as one of the quality indicators, all 14 studies made operational definitions and carried out measurements repeatedly. Thirteen studies reported interobserver agreement data. In terms of independent variables, all studies met the operational definition criterion. Thirteen studies were manipulated systematically; there was measurement of procedural fidelity in eight studies. All studies featured clear descriptions of baseline procedures, with sufficient baseline data described clearly in all but one of the 14 studies. Ten studies included three demonstrations of experiment effect as the quality indicator. Eleven studies controlled threats to internal validity. In terms of external validity, 11 studies replicated experimental effects. Finally, the dependent variable was socially important in all studies. However, eight studies showed that magnitude of changes in the dependent variables was socially important.

### **Discussion and Conclusion**

This study is an analysis of 20 studies that investigate interventions for teaching individuals diagnosed with AS. Content analysis results showed that most of participants in the studies

included in the scope of this review are male. Some of these participants also had ADHD as a comorbid disorder. These findings are consistent with the literature about the etiology of ASD and of AS, which is a sub-category of ASD (American Psychiatric Association, 2000, 2013). Another finding is that the majority of study participants were 9 or 10 years old, which is important for meeting the educational needs and supporting development of school-age individuals with AS. Additional findings in this review clearly show there is little research on pre-school individuals with AS and on individuals with AS who are over 18 years of age (Chan et al, 2009). The literature emphasizes the need to increase the numbers of studies on individuals with AS who are in pre-school, adolescence, and adulthood periods, to enable these individuals to continue their lives in productive, independent manners (Klin et al., 2005; Schall & McDonough, 2010).

In terms of content, most of the studies examined here followed a single-subject research design. This finding is not surprising because single-subject design is frequently employed in the special education and AS fields (e.g., Bernad-Ripoll, 2007). Despite the importance of single-subject designs for special education research, studies that use group experimental designs and qualitative designs should be generalized to strengthen and enrich literature findings in the AS field (Horner et al., 2005).

The content analysis also found that most practices aimed to improve social-communication skills. This finding is consistent with results of other research studies and review studies. The reason for this finding may be that although individuals with AS have various difficulties in different areas (e.g., sensory-motor), their main deficiency involves social-communication skills (Lee & Park, 2007; Myles & Simpson, 2001).

Lastly, results of this review show that interventions had positive effects on the individuals with AS, a finding consistent with other research and review studies in the relevant literature. Participants also generalized and maintained skills they acquired, which involve generalization and maintenance. In other words, the interventions that the articles within the scope of this review addressed in detail, and whose summaries appear in the existing research, serve individuals with AS in developing their abilities and continuing their lives independently (in a qualified manner) as much as possible (Chan et al., 2009; Sansosti & Powell-Smith, 2006).

The authors examined the reviews in this study methodologically based on quality indicators to facilitate an increase in the numbers of high-quality studies by enabling studies in the special education and AS fields to have stronger methodological rigor. The majority of the single-subject studies examined met quality indicators; in other words, they are methodologically strong. In this context, methodological strength entails (a) using appropriate procedures in selecting participants; (b) defining participants and processes of selection operationally; (c) defining dependent and independent variables of single-subject design studies operationally, measuring them repeatedly, and collecting interobserver agreement data; (d) performing multiple measurements to determine effects of practices. In conclusion, it can be said that studies in the AS literature are of scientifically high quality regarding criteria of quality indicators (Horner et al., 2005; Test et al., 2005).

However, the authors also think that if future studies take into account some quality indicators not met in the single-subject studies examined within this review's scope, scientific studies in the AS field will be methodologically stronger. Procedural fidelity, an important criterion for experimental studies, is one such indicator. Six of the fourteen single-subject studies did not measure procedural fidelity. Likewise, the review study by Chan et al. (2009) reported that procedural fidelity was the most important limitation of the studies under their examination. It is the only way of measuring whether plans have been duly and properly implemented. The procedural fidelity measurement is essential for understanding the functional relationship between implementation and results of implementation. Therefore, since lack of procedural fidelity data constitutes a problem for the relationship to be established between dependent and independent variables, measuring reliability of

implementation in a study is a recommended criterion for increasing scientific quality of studies (Test et al., 2005).

Social validity measurements that show magnitude changes of the dependent variable in single-subject design studies is another quality indicator. Six of the fourteen single-subject design studies under examination did not apply this quality indicator. However, demonstration of social significance of change in a dependent variable is accepted as a significant criterion in the context of social validity. Researchers need to meet this indicator for high-quality scientific studies (Test et al., 2005).

Contextually and methodologically, the current review has great importance in terms of examining interventions carried out for individuals with AS. However, there are also some limitations in this review. The first limitation is that all participants were people who had AS only. There was not a focus on the studies whose participants had autism and AS. Another limitation of the current review is that it considers only those articles that were accessed through English language publication databases. Finally, the methodological analysis conducted only for single-subject studies.

In sum, the authors contend that this review study will enable research based interventions for individuals with AS to be widespread by presenting knowledge about the interventions and their results, despite limitations of the existing research. In other words, such studies are important to closing the gap between theory and practice by turning research into practice. In this sense, the authors suggest that related institutions organize training seminars for practitioners and families to increase their competence on these topics. As the research makes clear, interventions for individuals with AS focus mostly on social and communication skills. However, the authors submit that interventions need to be multiplied in other fields where individuals with AS are in trouble (e.g., academic skills). New review studies related to the AS field, new research involving interventions for individuals with AS, and replications of existing research can also be carried out. Conducting future research with group experimental and qualitative designs is especially important. Another important point involves explaining research methods more clearly in future research. For instance, researchers need to describe how they carry out generalization studies and how they collect generalization data. Research in which the methodology is indicated to be based on case study approaches should state explicitly whether this means a qualitative case study, a case report, or a single subject case study A-B model. The authors advise that there should be more research in fields where individuals have problems, other than social and communication skills. Future studies can include sub-skills that not investigated inside social and communications skills (e.g., unspoken messages, body postures as nonverbal behavior). Lastly, future studies need to continue meeting quality indicators to increase their methodological rigor.



## References

References marked with an asterisk (\*) indicate studies included in the review.

- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5)*. Retrieved from <http://www.dsm5.org>.
- \*Beaumont, R., & Sofronoff, K. (2008). A multi-component social skills intervention for children with Asperger syndrome: The junior detective training program. *The Journal of Child Psychology and Psychiatry*, 49 (7), 743-753. doi:10.1111/j.1469-610.2008.01920.x.
- \*Bernad-Ripoll, S. (2007). Using a self-as-model video combined with social stories to help a child with Asperger syndrome understand emotions. *Focus On Autism and Other Developmental Disabilities*, 22 (2), 100-106.
- \*Bledsoe, R., Myles, B. S., & Simpson, R. L. (2003). Use of a social story intervention to improve mealtime skills of an adolescent with Asperger syndrome. *Autism*, 7 (3), 289-295. doi: 10.1177/1362361303007003005.
- \*Bock, M. A. (2007a). A social-behavioral learning strategy intervention for a child with Asperger Syndrome. *Remedial and Special Education*, 28 (5), 258-265. doi: 10.1177/07419325070280050101.
- \*Bock, M. A. (2007b). The impact of social-behavioral learning strategy training on the social interaction skills of four students with Asperger syndrome. *Focus On Autism and Other Developmental Disabilities*, 22 (2), 88-95. doi: 10.1177/10883576070220020901.
- \*Cameron, M. J., Shapiro, R. L., & Ainsleigh, S. A. (2005). Bicycle Riding: Pedaling made possible through positive behavioral interventions. *Journal of Positive Behavior Interventions*, 7 (3), 153-158. doi:10.1177/10983007050070030401.
- Castorina, L. L., & Negri, L. M. (2011). The inclusion of siblings in social skills training groups for boys with Asperger Syndrome. *Journal of Autism Developmental Disorders*, 41, 73-81. doi: 10.1007/s10803-010-1023-x.
- Chan, M. J., Lang, R., Rispoli, M., O'Reilly, M., Sigafoos, J., & Cole, H. (2009). Use of peer-mediated interventions in the treatment of autism spectrum disorders: A systematic review. *Research in Autism Spectrum Disorders*, 3, 876-889. doi:10.1016/j.rasd.2009.04.003.
- \*Choi, S. H. - J., & Nieminen, T. A. (2008). Naturalistic intervention for Asperger syndrome A case study. *British Journal of Special Education*, 35 (2), 85-91. doi: 10.1111/j.1467-8578.2008.00377.
- \*Cragar, D. E., & Horvath L. S. (2003). The application of social skills training in the treatment of a child with Asperger's disorder. *Clinical Case Studies*, 2 (34), 34-49. doi: 10.1177/1534650102239087.
- \*Delano, M. E. (2007a). Improving written language performance of adolescents with Asperger syndrome. *Journal of Applied Behavior Analysis*, 40 (2), 345-351. doi: 10.1901/jaba.2007.50-06.
- \*Delano, M. E. (2007b). Use of strategy instruction to improve the story writing skills of a student with Asperger syndrome. *Focus On Autism and Other Developmental Disabilities*, 22 (4), 252-258 doi: 10.1177/10883576070220040701.

- Horner, H. R., Carr, G. E., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children*, 71 (2), 165-179.
- Klin, A., McPartland, J., Volkmar, F.R. (2005). Asperger's Syndrome. In F.R. Volkmar, R. Paul, A. Klin, & D. Cohen (Eds.), *Handbook of Autism and Pervasive Developmental Disorders*, 3rd ed., (pp. 88-125). Hoboken: Wiley.
- \*Lacava, P. G., Golan, O., Baron-Cohen, S., & Myles, B. S. (2007). Using assistive technology to teach emotion recognition to students with Asperger syndrome. *Remedial and Special Education*, 28 (3), 174-181. doi: 10.1177/07419325070280030601.
- \*Lang, S., Shogren, K. A., Machalicek, W., Rispoli, M., O'Reilly, M., Baker, S., & Regeher, A. (2009). Video self-modeling to teach classroom rules to two students with Asperger's. *Research in Autism Spectrum Disorders*, 3, 483-488. doi:10.1016/j.rasd.2008.10.001.
- Lee, J. H., & Park, R. P. (2007). An integrated literature review on the adaptive behavior of individuals with Asperger syndrome. *Remedial and Special Education*, 28 (3), 132-139. doi: 10.1177/07419325070280030201.
- Myles, B., S., & Simpson, R., L. (2001). Effective practices for students with Asperger syndrome. *Focus on Exceptional Children*, 34 (3), 1-14.
- \*Myles, B. S., Ferguson, H., & Hagiwara, T. (2007). Using a personal digital assistant to improve the recording of homework assignments by an adolescent with Asperger syndrome. *Focus On Autism and Other Developmental Disabilities*, 22 (2), 96-99. doi: 10.1177/10883576070220021001.
- Ozonoff, S., South, M., & Miller, J. (2000). DSM-IV-defined Asperger syndrome: Cognitive, behavioral and early history differentiation from high-functioning autism. *Autism*, 4, 29-46.
- \*Rodger, S., Pham, C., & Mitchell, S. (2009). Cognitive strategy use by children with Asperger's syndrome during intervention for motor-based goals. *Australian Occupational Therapy Journal*, 56, 103-111. doi: 10.1111/j.1440-1630.2007.00719.x.
- \*Sansosti, F. J., & Powel-Smith, K. A. (2006). Using social stories to improve the social behavior of children with Asperger syndrome. *Journal of Positive Behavior Interventions*, 8 (1), 43-57. doi:10.1177/10983007060080010601.
- \*Scattone, D. (2008). Enhancing the conversation skills of a boy with Asperger's disorder through social stories and video modeling. *Journal of Autism and Developmental Disorders*, 38, 395-400. doi: 10.1007/s10803-007-0392-2.
- Schall, C. M. & McDonough, J. T. (2010). Autism spectrum disorders in adolescence and early adulthood: Characteristics and issues. *Journal of Vocational Rehabilitation*. 32, 81-88. doi: 10.3233/JVR-2010-0503.
- \*Shogren, K. A., Lang, R., Machalicek, W., Rispoli, M. J., & O'Reilly, M. (2011). Self- versus teacher management of behavior for elementary school students with Asperger Syndrome: Impact on classroom behavior. *Journal of Positive Behavior Interventions*, 13 (2), 87-96. doi: 10.1177/1098300710384508.
- \*Sofronoff, K., Attwood, T., Hinton, S., & Levin, I. (2007). A randomized controlled trial of a cognitive behavioural intervention for anger management in children diagnosed with Asperger syndrome. *Journal of Autism and Developmental Disorders*, 37, 1203-1214. doi: 10.1007/s10803-006-0262-3.

- \*Stewart, K. K., Carr, J. E., & LeBlanc, L. A. (2007). Evaluation of family-implemented behavioral skills training for teaching social skills to a child with Asperger's disorder. *Clinical Case Studies*, 6 (3), 252-262. doi: 10.1177/1534650106286940.
- Test, D. W., Fowler, H. C., Brewer, M. D., & Wood, M. W. (2005). A content and methodological review of self-advocacy intervention studies. *Exceptional Children*, 72 (1), 101-125.
- Wenzel, C., & Rowley, L (2010). Teaching social skills and academic strategies to college students with Asperger's syndrome. *Teaching Exceptional Children*, 42 (5), 44-50.
- \*Wilkinson, L.A. (2005). Supporting the inclusion of a student with Asperger syndrome: A case study using conjoint behavioural consultation and self-management. *Educational Psychology in Practice*, 21 (4), 307-326. doi: 10.1080/02667360500344914.
- World Health Organization. (1992). *International classification of diseases and related health problems* (10th rev.). Geneva, Switzerland: Author.

### **Authors' Note**

The authors express their thanks to Dr. Lee A. Wilkinson, who answered questions about the research methodology frankly and, of course, quickly. They thank Prof. Dr. Elif Tekin-İftar, Prof. Dr. Atilla Cavkaytar and Prof. Dr. İbrahim H. Diken, who provided their opinions about the study. Furthermore, the authors thank Ayşe TUNÇ, Fidan ÖZBEY, B. Fatih MERAL, and Sertan TALAS ve Fidan Güneş GÜRGÖR, who helped with the reliability analysis process. The current study was presented as a poster entitled "A Content and Methodological Review of Interventions in the Treatment of Asperger Syndrome" at the ABAI 6th Annual Autism Conference Philadelphia, PA, US, 2012.

## Appendix

**Table 1 Summary of research studies on interventions in the treatment of Asperger's Syndrome**

Authors	Year	N	Research Design	Intervention(s)	Results
Bledsoe, Myles, & Simpson	2003	1	Quantitative, single subject experimental, ABAB	Social stories	Improved appropriate eating behaviors
Cragar & Horvath	2003	1	Qualitative, case study	Social skills training	Improved social skills
Cameron, Shapiro, & Ainsleigh	2005	1	Quantitative, single subject experimental, changing criterion design	Positive behavioral intervention	Targeted skill (bicycle riding) learned
Wilkinson	2005	1	Quantitative, single subject experimental, AB	Conjoint behavioral consultation	Enhanced on-task and compliant behavior
Sansosti & Powell-Smith	2006	3	Quantitative, single subject experimental, multiple baseline-across-participants	Social stories	Increased social engagement skills for 2 children
Bernad-Ripoll	2007	1	Quantitative, single subject experimental, AB	Video modeling and social stories	Learned recognizing and understanding emotions
Bock	2007a	1	Quantitative, single subject experimental, multiple baseline-across-settings	Social-behavioral learning strategy	Increased social interaction skills
Bock	2007b	4	Quantitative, single subject experimental, multiple baseline-across-settings	Social-behavioral learning strategy	Increased social interaction skills
Delano	2007a	3	Quantitative, single subject experimental, multiple baseline-across-responses	Self-Regulated Strategy Development delivered via video self-modeling	Improved writing skills
Delano	2007b	1	Quantitative, single subject experimental, multiple baseline-across-responses	Self-Regulated Strategy Development	Improved writing skills
Lacava, Golan, Baron-Cohen, & Myles	2007	8	Quantitative, nonequivalent pretest-post-test experimental group design	Assistive technology The Interactive Guide to Emotions™	Improved recognizing emotions

Table 1 continued

Authors	Year	N	Research Design	Intervention(s)	Results
Myles, Ferguson, & Hagiwara	2007	1	Quantitative, single subject experimental, multiple baseline-across-settings	Assistive technology	Increased recording of homework assignment
Sofronoff, Attwood, Hinton, & Levin	2007	45	Quantitative, group experimental	Cognitive Behavioral Intervention	Significant changes in anger management skills of intervention group
Steward, Carr, & LeBlanc	2007	1	Quantitative, single subject experimental, AB	Behavioral skills training	Improved conversation skills
Beaumont & Sofronoff	2008	49	Quantitative, group experimental	A Multi-component social skills intervention	Greater improvements in social skills and emotion management strategies for intervention group
Choi & Nieminen	2008	1	Qualitative, case study	Naturalistic multiple-component intervention	Targeted social skills improved
Scattone	2008	1	Quantitative, single subject experimental, multiple baseline-across-responses	Videotaped social stories	Increased 2 of 3 targeted conversation skills
Lang, Shogren, Machalicek, Rispoli, O'Reilly, Baker, & Regeher	2009	2	Quantitative, single subject experimental, multiple baseline-across-participants	Video self-modeling	Learned classroom rules
Rodger, Pham, & Mitchell	2009	2	Qualitative, case study	Cognitive Orientation to Daily Occupational Performance	Used to cognitive strategies effectively to enhanced performance of motor-based goals
Shogren, Lang, Machalicek, Rispoli, & O'Reilly	2011	2	Quantitative, single subject experimental, ABACABAC	Token economy and self-management	Developed appropriate classroom behavior and academic engagement

**Table 2 Summary of quantitative research studies**

Authors	Year	Participants N, Gender	Age (years)	Settings	Types of quantitative design	Dependent Variable(s)	Independent Variable(s)	Results/Maintenance/Generalization
Bledsoe, Myles, & Simpson	2003	1, M	10	Social service agency	Single subject experimental, ABAB	Appropriate eating behavior	Social stories	1. Improved appropriate eating behaviors 2. Generalization data were not collected 3. Maintenance data were not collected
Cameron, Shapiro, & Ainsleigh	2005	1, M	9	Home, community	Single subject experimental, changing criterion design	Bicycle riding	Positive behavioral intervention	1. Targeted skill learned 2. Demonstrated how the tenets of PBS designed to teach an educational program 3. Gains were generalized to new skills 4. Participant's maintained target skill at 2 weeks and 1-year follow-up
Wilkinson	2005	1, M	9	Home, School	Single subject experimental, AB	Challenging behavior	Conjoint behavioral consultation and self-management	1. Enhanced on-task and compliant behavior 2. Participants could generalize behavior across settings 3. Gains were maintained in a 2-week follow-up
Sansosti & Powell-Smith	2006	3, M	10	School	Single subject experimental, multiple baseline-across-participants	Social engagement skills	Social stories	1. Two of the 3 children's social engagement skills increased 2. Generalization data were not collected 3. Maintenance of target behaviors was not observed for 2 weeks follow-up

Table 2 continued

Authors	Year	Participants		Settings	Types of quantitative design	Dependent Variable(s)	Independent Variable(s)	Results/Maintenance/Generalization
		N, Gender	Age (years)					
Bernad-Ripoll	2007	1, M	9	Home	Single subject experimental, AB	Recognition of emotions Understanding emotions	Video modeling and social stories	1. Recognized emotions and identified appropriate actions associated with each emotions 2. Results generalized to other situations 3. Maintenance data were not collected
Bock	2007a	1, M	12	School	Single subject experimental, multiple baseline-across-settings	Social interaction skills	Social-behavioral learning strategy	1. Increased social interaction skills 2. Generalization data were not collected 3. A 2-month follow-up showed high performance
Bock	2007b	4, M	9-10	School	Single subject experimental, multiple baseline-across-settings	Social interaction skills	Social-behavioral learning strategy	1. Increased social skills 2. Generalization data were not collected 3. A 5-month follow-up showed high performance
Delano	2007a	3, M	13-15-17	University conference room	Single subject experimental, multiple baseline-across-responses	Written skills	Self-Regulated Strategy Development delivered via video self-modeling	1. Improved writing skills 2. Results generalized to other skill. 3. Gains were maintained in a 1-12 weeks follow-up

Table 2 continued

Authors	Year	Participants		Settings	Types of quantitative design	Dependent Variable(s)	Independent Variable(s)	Results/Maintenance/Generalization
		N, Gender	Age (years)					
Delano	2007b	3, M	13-15-17	University conference room	Single subject experimental, multiple baseline-across-responses	Written skills	Self-Regulated Strategy Development delivered via video self-modeling	1. Improved writing skills 2. Results generalized to other skill. 3. Gains were maintained in a 1-12 weeks follow-up.
Lacava, Golan, Baron-Cohen, & Myles	2007	8, F: 2, M: 6	Mean= 10.27	Home, School	Nonequivalent pretest-post-test experimental group design	Emotion recognition	Assistive technology	1. Improved recognizing emotions 2. Participants could generalize their emotion recognition skills to other tasks that were not covered in the computer software Mind Reading 3. Maintenance data were not collected
Myles, Ferguson, & Hagiwara	2007	1, M	17	School	Single subject experimental, multiple baseline-across-settings	Homework recording	Assistive technology	1. Increased recording of homework assignment 2. Generalization data were not collected 3. Maintenance data were not collected
Sofronoff, Attwood, Hinton, & Levin	2007	45, F: 2, M: 43	Between 10-14	Clinic	Group experimental	Anger management	Cognitive Behavioral Intervention	1. Significant changes in anger management skills of intervention group 2. Results generalized to home and school settings 3. A 6-weeks follow-up indicated same changes
Stewart, Carr, & LeBlanc	2007	1, M	10	Home	Single subject experimental, AB	Conversation skills	Behavioral skills training	1. Improved conversation skills 2. Generalization data were not collected 3. Gains were maintained in a 3-months follow-up



Table 2 continued

Authors	Year	Participants		Settings	Types of quantitative design	Dependent Variable(s)	Independent Variable(s)	Results/Maintenance/Generalization
		N, Gender	Age (years)					
Beaumont & Sofronoff	2008	49, F: 5, M: 44	between 7-11	University	Group experimental	Emotion recognition Emotion management strategies Social competence	A multi-component social skills intervention	1. No significant differences in the two groups on emotion recognition 2. Participants in intervention group showed greater improvements in other dependent variables 3. Generalization data were not collected 4. Treatment gains were maintained by children at 5-months follow-up
Scattone	2008	1	M: 9	Medical center	Single subject experimental, multiple baseline-across-responses	Conversation skills	Videotaped social stories	1. Increased 2 of 3 targeted conversation skills (eye contact and initiations) 2. Results generalized to school settings 3. Maintenance data were not collected
Lang, Shogren, Machalicek, Rispoli, O'Reilly, Baker, & Regester	2009	2	M: 5	School	Single subject experimental, multiple baseline-across-participants	Classroom rules	Video self-modeling	1. Learned classroom rules 2. Generalization data were not collected 3. Gains were maintained in a 2-4-8-12-weeks follow-up
Shogren, Lang, Machalicek, Rispoli, & O'Reilly	2011	2	M: 5	School	Single subject experimental, ABACABAC	Appropriate classroom behaviors  Academic engagement	Token economy and self-management	1. Developed appropriate classroom behavior and academic engagement 2. Generalization data were not collected 3. Gains were maintained in a 2-4-8-weeks follow-up

**Table 3 Summary of qualitative research studies**

Authors	Year	Participants		Settings	Types of qualitative design	Research Aims	Intervention(s)	Results/Maintenance/Generalization
		N, Gender	Age (years)					
Cragar & Horvath	2003	1, M	10	University	Case study	Described the application of a social skills program and presented the results	Social skills training	<ol style="list-style-type: none"> <li>1. Improved social skills</li> <li>2. Gains were not generalized</li> <li>3. Gains were maintained in a 2-week follow-up</li> </ol>
Choi & Nieminen	2008	1, M	8	School	Case study	Reported a social skill intervention results	Naturalistic multiple-component intervention	<ol style="list-style-type: none"> <li>1. Improved social interaction</li> <li>2. Generalization data were not collected</li> <li>3. Maintenance data were not collected</li> </ol>
Rodger, Pham, & Mitchell	2009	2, F:1, M:1	9, 11	Clinic, home	Case study	Described the cognitive strategy use of participants during intervention	Cognitive Orientation to Daily Occupational Performance	<ol style="list-style-type: none"> <li>1. Used to cognitive strategies effectively to enhanced performance of motor-based goals</li> <li>2. Generalization data were not collected</li> <li>3. Maintenance data were not collected</li> </ol>

**Table 4 Quality indicators for single-subject studies**

INDICATOR	Bledsoe et al., 2003	Cameron, et al., 2005	Wilkinson, 2005	Sansosti & Powell- Smith, 2006	Bernad- Ripoll, 2007	Bock, 2007a	Bock, 2007b	Delano, 2007a	Delano, 2007b	Myles et al., 2007	Stewart et al., 2007	Scattone, 2008	Lang et al., 2009	Shogren, et al., 2011
<b>Participants/Settings</b>														
• Participants described sufficiently	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Participants selection described sufficiently	N	Y	Y	Y	N	N	N	Y	Y	Y	Y	Y	Y	Y
• Setting described sufficiently	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
<b>Dependent Variable</b>														
• Operational definition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Measured repeatedly	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Interobserver agreement	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y
<b>Independent Variable</b>														
• Operational definition	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Systematically manipulated	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Measurement of procedural fidelity	N	N	Y	Y	N	Y	Y	N	Y	N	Y	Y	N	Y

Table 4 continued

INDICATOR	Bledsoe et al., 2003	Cameron, et al., 2005	Wilkinson, 2005	Sansosti & Powell- Smith, 2006	Bernad- Ripoll, 2007	Bock, 2007a	Bock, 2007b	Delano, 2007a	Delano, 2007b	Myles et al., 2007	Stewart et al., 2007	Scattone, 2008	Lang et al., 2009	Shogren, et al., 2011
<b>Baseline</b>														
• Described with replicable precision	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• Phase provided evidence of pattern prior to intervention	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
<b>Experimental Control/Internal Validity</b>														
• Three demonstrations of experimental effect	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y
• Controlled threats to internal validity	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	Y	Y
<b>External Validity</b>														
• Effects are replicated	Y	N	N	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y
<b>Social Validity</b>														
• Dependent variable is socially important	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
• The magnitude of change in the dependent variable resulting from the intervention socially important	N	Y	Y	N	Y	Y	Y	N	N	N	Y	Y	N	
Note. Y=Yes; N=No.														

# Purification of Soul in R.K. Narayan's, *The Guide*

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## Abstract

R.K. Narayan is one of the most well known novelist in India who writes in English. He is well known for his depiction and humourous writing on Indian society and culture. R.K. Narayan is essentially a storyteller, whose sensitive, well-drawn portrayals of twentieth-century Indian life were set mostly in the fictional South Indian town of Malgudi. Most of his novels capture many Indian traits while having a unique identity of their own. *The Guide*, which is also set in the town of Malgudi is written in a simple style, unpretentious, and witty with a unique flavour as if he was writing in the native mother tongue. The story seems to depict the everyday life of the simple characters in a rather amusing and comical way. But at the same time one can't help to wonder if R.K. Narayan, who is hailed as a master story teller of India, has only the motive of entertaining and being comical in this book. I believe R.K. Narayan has a wider and rather philosophical message beneath his work. From pages to pages of this novel, I noticed how the author holds dear to the age old philosophy that underlines the core of Hinduism – the law of Karma. Therefore, to understand *The Guide*, one needs to understand the theological aspects of Hinduism. This novel actually takes the readers on a journey of Hinduism and shows how the transition and purification of a Hindu soul takes place through the main character, Raju. Narayan shows how Raju, a character full of flaws goes through different phases in his life to redeem his sins and become a changed person towards the end.

**Keywords:** purification    soul    Hinduism

**Purification of Soul in R.K. Narayan's, *The Guide***

*Whatever happened, happened well,  
What's happening happens well,  
All that is supposed to happen will happen well as well.  
What have you lost to cry?  
What have you brought to loose?  
What have you created to waste?  
Whatever is taken, is taken from here.  
Whatever that's given is given from here.  
All that is yours today  
Will be other's tomorrow.  
On another day it will be someone else's  
This change is the law of nature.*

(Bhagavad Gita)

## Introduction

No writer is born out of a vacuum. A writer is usually shaped by his surroundings. Therefore, a writer's thoughts are often moulded by his culture, religion and the society that he lives in. R.K. Narayan is no exception. He is one of the most well known novelist from India who writes in English about the Indian society and culture. His books are most widely read in India and in many countries of the world. R.K. Narayan is essentially a storyteller, whose sensitive, well-drawn portrayals of twentieth-century Indian life are set mostly in the fictional South Indian town of Malgudi. Most of his novels capture many Indian traits while having a unique identity of their own. *The Guide*, which is also set in the town of Malgudi is written in a simple style, unpretentious, and witty with a unique flavour as if he was writing in the native mother tongue. The story seems to depict the everyday life of the simple characters in a rather amusing and comical way. Being highly entertaining, it comes with little surprise if *The Observer* hailed this work as...

*"There is something almost Irish in the humour, buzz and blarney of Narayan's world which seems continents removed from the anguished India of most fiction, and the rope trick of irony, fun and feeling is beautifully adroit".*

But at the same time one can't help to wonder if R.K. Narayan, who is hailed as a master story teller of India, has only the motive of entertaining and being comical in this book. I believe R.K. Narayan has a wider and rather philosophical message beneath his work. From pages to pages of this novel, I have noticed how the author holds dear to the age old philosophy that underlines the core of Hinduism – the law of Karma. Therefore, to understand *The Guide*, one needs to understand the theological aspects of Hinduism. One can rebut that R.K. Narayan was never known to be a staunch Hindu, but it is impossible for anyone born in the heart of a Hindu land not to be influenced by its teaching or philosophy. It must also be noted that R.K. Narayan belongs to the Brahmin caste. Traditionally the members of this caste are the theologian group that takes it upon themselves to protect the religion, ensure the purity of the rituals and uphold its philosophy and teachings. Their role as the guardian of the religion somehow diluted with the changing of time. But still even at this modern times, the members of this caste are never naïve about the fundamental aspects and philosophy of Hinduism. Any social scientist who dwells on the lives of Indians will surely agree how inseparable their day to day life is with their religion. As a matter of fact many Hindus never had any formal religious education. But at the same time, in no way are they less religious than the others. The subtle philosophy of Hinduism that was held with all might for centuries are departed without failure from generation to generation; so much more among the Brahmins. So much so, the complicated philosophies, such as karma and rebirth, have become the gist of daily jargon even among the youngsters.

## Hindu's concept of soul

Hinduism believes that every living entity possess a soul. Souls evolve through rebirth. It starts with creatures of lower rank such as insects and evolves step by step until

it takes the form of a human. The concept of evolution in Hinduism differs greatly from science. Science accepts the fact that living organisms do evolve to suit themselves to the environment, climate and various external factors. As far as human beings are concerned, the scientist who holds the Darwinian theory of "Evolution of Species" deems it as complete with the existence of Homo Sapiens. In short, the concept of evolution in science is based upon and limited to the physical sphere only. The coming forth of the species known as Homo Sapiens marked the completion of evolution.

But in Hinduism, evolution doesn't end in physical realms. Instead, it adds another aspect which is known as the evolution of soul. Where science considers the evolution of mankind is completed, Hinduism considers it as just the beginning. As J. Donald Walters (later came to be known as Swami Kriyananda) puts it...

*Evolution doesn't end at the human level. In self-awareness, indeed, it has only reached its beginning... One life time is not sufficient for that development (Walters 246).*

In this sense, rebirth also equals to evolution. An individual takes different physical forms as a human being to improve the conditions of his soul which includes his way of thinking, world view, perception, code of ethics, conduct, etc. One peculiar concept of Hinduism that distinguishes it from other main religions on earth (with the exception of Buddhism and Jainism) is that the life span on this earth is not the finite period which earns him a place in heaven or leads his condemnation in the after world. Instead, the concept of eternal condemnation is alien to Hinduism.

In short Hinduism is a religion of hope. An individual is given infinite chance to correct himself and to purify his soul in order to attain *mokhsa* (to be one with God). The goal of every Hindu is to escape the cycle of rebirth and attain God. In the after world, punishments are meted out to one in accordance with his wrong doings while living on earth. But it is not the end of him. After enduring the punishment, the soul is given another chance to be reborn in order to cleanse its sins and “fight on” to attain *mokhsa*. Thus, a man will be born over and over as human, in various situations in order to undo his sins of the past.

Thus, souls are born pure. But it has to undergo various tests in order to prove its worthiness to enter the abode of God. The failure to stand steadfast in the face of calamity will cause it to be reborn. As a matter of fact, being reborn itself is a form of condemnation. The pain, agony, obstacles and various hurdles a man faces in his life are actually some mode of “paying back” for the sins he had accumulated in his past life. There is no way for him to know what sins he is “paying back” for now. But for a true Hindu, that is not his concern. He just needs to accept that he is paying back and accept the pain it causes him with an open heart while trying to live a righteous path.

Therefore, it is not unusual for a Hindu to accept his life as a matter of fate. “Fate” in the Hindu sense of belief is the episodes that were planned by God in all His wisdom to enhance the chance of a mortal, to eradicate his past sins and escape his vicious cycle of rebirth. The role of man and God in the concept of Hinduism is rather complex. While God is the ultimate planner, He doesn't limit life to His decision alone. In contrast, every soul is given the freedom to decide the course of action within the limit set by Him...

*God is not simply amusing Himself. He created life that it might participate consciously in a great adventure (Walters 247).*

Most science educated people and authors assume a cynical approach in these matters. Accepting a general evolution that moves upward, they reject the idea that individual souls evolve too. But a careful study of *The Guide*, will show that it is this philosophy that governs the entire work of R.K Narayan. In the very beginning of this novel itself, Narayan has stressed on the law of karma or what is known, in the day-to-day usage as fate...

*You may want to ask why I became a guide or when. I was a guide for same reason as someone else is a signaller, porter, or guard. It is fated thus (Narayan 8).*

The concept of fate is prevalent throughout this novel. In another episode, when Raju meets Velan's sister and says that he has to think over the matter and that they cannot force vital solutions, like any other Hindu, Velan too leaves it to the fate.

He drew his fingers across his brow and said, “Whatever is written here will happen. How can we ever help it? (Narayan 18)

Likewise Raju too accepts everything that happens around him as the work of fate.



*Raju declared, fixedly looking at the girl, "What must happen must happen; no power on earth or in heaven can change its course, just as no one can change the course of that river." (Narayan 18)*

These simpleton episodes may not have any bearing for an ordinary reader. But it goes a long way for this study. It shows how R.K. Narayan adheres to the Hindu philosophy of karma. It is this philosophy that brings forth the character Raju and controls every act of his throughout the novel.

### **The Hindu Soul in Raju**

A Hindu who understands the concept of soul will never view any of his fellow human being judgementally. He will accept his existence with all the shortcomings as a carefully laid plan by God in order to give him a chance to erase his past karma. In short, the nature of life handed over to each individual is in accordance with his deservingness.

*The lowly born and the economically downtrodden are so only because of the sins they had acquired in earlier lives (Chennakesavan 160).*

In other words, the birth and existence of an individual is never by chance. As far as the Hindus are concerned, there is always a justification in the nature of one's existence in this world. It is the "fate" which they deservedly earned due to their course of life in the previous birth. The lame, the crippled, the leper, the poor, and every inadequate individual are the blessed ones who are given the chance to redeem themselves. Thus, a true Hindu will never look highly upon himself in comparison with the suffering of the others or the lowly masses. Hindus are taught to accept their existence in this world as a planned act of God for the betterment of their souls.

It is rather obvious that, it is this philosophical concept of Hinduism that moved R.K. Narayan to develop the character of Raju. As a true Hindu, R.K. Narayan was never judgemental towards Raju. Like all humans, Raju's character has its own flaws and positive traits. In the beginning of the novel, when Raju is met by Velan at the old shrine, a flashback to Raju's life states that tourists often recommended Raju's service to each other when they came to visit the town of Malgudi.

*If you are lucky enough to be guided by Raju, you will know everything. He will not only show you all the worth-while places, but also help you in every way". It was in his nature to get involved in other people's interests and activities. "Otherwise," Raju often reflected, "I should have grown up like a thousand other normal persons, without worries in life (Narayan 6).*

This helpful nature in him actually led him to interfere in the lives of Rosie and Marco. The interesting part is how Narayan narrated the story of Raju's life as it has been fated and Narayan refused to interfere with the character's involvement. Raju himself agrees that it is fated that he becomes a guide. (Narayan 8)

In the hands of R.K. Narayan, Raju is treated with dignity and respect, something every Hindu is expected to do. There is never a moment where Raju is treated as a condemned soul. In the eyes of normal people, Raju is an antagonist; an arrogant, selfish, and a pervert cheat. However, in the eye of R.K. Narayan, Raju is an ordinary soul who is going through the cycle of his karma. Consequently, he accepted Raju with all his shortcomings, as an intelligent plan laid by God with a definite purpose. God is the setter of events and situation. God alone understands best the setting that will enable an individual to "pay back" for his past karma. In short, God is the "Universal Guide". As a matter of fact, Raju himself is aware of it...

*"I'm but an instrument accepting guidance myself". (Narayan 39)*

This single statement of Raju, or rather should I say by the author, can very well be highlighted as the core of the novel. This is a statement that befits a Hindu who understood the true nature and the secret of existence. Being reborn, a Hindu accepts his life as a testing ground. He is but an instrument in the hands of the Almighty. It is God who moves and manipulates his life. If he is condemned to prison, it is not the evil in his soul that causes it. It was merely planned by the “Universal Guide” to give chance for Raju to redeem himself. If he craves for a woman who happens to be someone else’s wife, it is not his doing alone. It was meant for him to go through the ordeal in order to understand the pain and agony that will befall him due to that act. As a matter of fact, Raju has very little say over his act. The “Universal Guide” moves him in accordance with a carefully laid plan. That is why Raju simply cannot comprehend the advice given by Gaffur that he leaves Rosie alone. Raju himself realised that the advice is very reasonable...

*“It was a very reasonable advice he was giving me. Even at that moment, it would have been all different if God had given me the sense to follow Gaffur’s advice. I should have gone quietly back, leaving Rosie to solve her problems with her husband. That would have saved many sharp turns and twists in my life’s course.”*  
(Narayan 115)

But he didn’t. As a matter of fact, he couldn’t. Raju was merely walking the trail set by the “Universal Guide”. The trail was simply meant for him. He was meant to walk through the path. He could have adhered to Gaffur’s advice and saved himself from various miseries. But that was not meant to be. The misery is inevitable. There is a lesson to be learnt by Raju’s soul from this episode. And the lesson was meant to cleanse his soul.

R.K. Narayan went a great length to prove his point that no soul is born evil. The evil outlook in a human is just illusion for those who fail to understand the concept of soul. Raju headed towards this village in order to heal his wounds. Having been freed from prison, Raju just wanted an asylum to recompose himself. He is clearly tired of the world. More so, he is tired with his life. As a condemned conman, the world may not want to give Raju another chance.

But that is not the case with R.K. Narayan. The author realises that there is a gem in every soul, including the so called conman, Raju. It is this gem that will shine when polished and nurtured properly. Velan and his fellow village men act as the polish to enable Raju to shine. Their love, trust and reverence became the catalyst for the soul inside Raju to demonstrate its true nature. Towards the end of this novel, Raju had a chance to give up his fasting due to doctor’s advice but he refused! That is truly the manifestation of an enlightened soul.

### **Purification of the Soul**

There is a saying in Tamil: “Don’t ever query the source of a river and the background of a sadhu (holy man)”. The reason is— both will be disappointingly beyond one’s expectation. A gigantic and a majestic river will have only a very humble beginning in the mist of the roots whereas a holy man could very well have a notorious background. There is no denying that R.K. Narayan has used the saying above as a guide to present his readers with such a dynamic story, *The Guide*, with his lead character Raju.

Having accepted the fact that every individual is actually the embodiment of a soul which was sent to undergo the journey on the earth for a definite purpose, it is now the duty of Narayan to show how the events that took place in the life of Raju contribute towards the cleansing of his soul. If we see closely, Raju’s life goes through a cycle of hurdles and tests. He evolves from an ordinary boy who is much influenced by his surroundings and the lifestyle of families living along the railway line into a guide. Circumstances changed him from a shopkeeper into a guide. He is no ordinary guide as he is very skilful at conversations. He’s able to read his customers’ mind and renders good service to them. It is this character of his that enables him to win the heart of Rosie – another man’s wife. Finally, he ends up in jail for forgery. These are the events deliberately set by the “Universal

Guide". The ups and downs in his life are the hurdles placed in his journey to test and mould his soul. It is the hope of the "Universal Guide" that he learns from his mistakes, the pain and agony, through which he finds the true purpose of his existence.

Narayan chose the ancient shrine to begin Raju's purification of the soul. Maybe the temple setting creates the right mood for the author to start his "work" on Raju. When Raju is approached by a sad Velan from Mangal, he actually wanted to confess that he was from prison but he did not want to upset Velan who was already feeling very down. Velan started confessing his problem and a simple remedy given by Raju happen to change everything in Velan's life. Velan was a catalyst and a starting point of Raju's purification. Velan's reverence towards him jolted Raju from his mundane and vicious net of ignorance. For once Raju realises that his life is worthy towards others. Yet his simple mind, which was entangled in the web of materialism, didn't permit him to turn over a new leaf immediately. The process of purification is not that simple though.

But just like the Creator will not give up in His quest to purify a soul, so does R.K Narayan. Various incidents that took place while he took shelter in the temple accumulated to expedite his purification. From a self-centred and a snobbish individual, he was "cornered" to realise his true self. He realises that life is not merely a biological process of breathing, eating, sleeping, and being merry. Life, in the true sense also means sacrificing and giving selflessly to others...

*He not only chanted holy verses and discoursed on philosophy, he even came to the stage of prescribing medicine; children who would not sleep peacefully at night were brought to him by their mothers; he pressed their bellies and prescribed a herb, adding, "If he still gets no relief, bring him again to me." (Narayan 46)*

A critic could rebut that Raju was just pretending to be a saint and taking the naïve folks of the secluded village for a ride. But if that is the case then he need not ask them to bring back the children to him. It shows the inner self inside him that truly cares for them. Deep inside this conman and ex-convict lays a soul which cries for his fellow brethren and was struggling to liberate itself from the vicious bondage of sin. The temple is not the only asylum in South India. India is well known for its hundreds of ruined and abandoned temples. Raju surely had a choice of leaving the temple and finding another place that will suit his wants and needs. But he chose not to. His soul has decided to make good of the setting aligned by the Master Guide to undo his sins in the past...

*He had to set apart several hours of his afternoon for these activities. He could hardly afford a private life now. Came a stage when he had to be up early and rush through all his own personal routine before his visitors should arrive. It was a strain... (Narayan 46)*

With that, Raju has started the war to free himself from the bondage of sin. The war is between the two contradicting forces within him. The evil inside him is adamant in wanting to be left alone, to enjoy the fruits of life and to take others for a ride. Whereas, the saint in him craves to serve and lay down his life for others. At the end of the day, R.K Narayan clearly allowed the later to prevail. This victory of the soul, comes to light at a later stage, when he was "cornered", to fast and perform penance in order to bring rain to the drought stricken village....

*With a vindictive resolution he told himself, "I'll chase away all thoughts of food. For the next ten days I shall eradicate all thoughts of tongue and stomach from my mind." (Narayan 212)*

The evolution of Raju's soul reached its zenith towards the end of the story. By then this so called conman has liberated his soul from the bondage of worldly and mundane thoughts. He had come to term with the law that governs the life of a Hindu. In short, he realises the hidden secret of

life – to serve selflessly and to attain the blessings of the Creator in order to be one with Him. Thus, there is a joy in his heart when he realises that His/God's wisdom is greater than his sorrow...

*"If by avoiding food I should help the trees bloom, and the grass grow, why not do it thoroughly?" For the first time in his life he was making an earnest effort; "for the first time he was learning the thrill of full application, outside money and love; for the first time he was doing a thing in which he was not personally interested. He felt suddenly so enthusiastic that it gave him a strength to go through with the ordeal". (Narayan 212)*

It is with this joy and realization that he stood steadfast with his fasting to the very end. Plea after plea from people around him, including the government and the doctors that he breaks his fast never bothers him; for the mundane and worldly Raju is not there anymore. What is left is only a purified soul that cares not about living and dying.

### Conclusion

R.K Narayan has always been a realist. His characters, even though fictional, always portray the element of realism. So, it is not something unusual if the character Raju too was developed as a round character with all the strength and the short comings that are surely to prevail in a real life. There was never a forced or fortified portrayal of Raju. R.K. Narayan just allows him to take shape the way he is. Raju is not portrayed as a bad or good person altogether. He does have some goodness in him. Raju by nature is a helpful person. Tourists to Malgudi like to hire him for his good nature. He likes to give tips to the clerk at the hotel counter so that he will entertain his customers well. Besides that, he also bargains a good price for Gaffur's taxis. He makes sure that Gaffur does not cheat the tourists. He helped Rosie to become a famous dancer although he was obliged to her request, having been smitten by her beauty. It was Raju that made Rosie so popular. In short, he is a man of the world.

In the hands of an ordinary author, Raju would have ended up as an antagonist who would have laughed all his way to freedom after taking the people of the village for a ride. And the audience of this book would have laughed along with Raju and hailed R.K. Narayan for his wittiness in producing a comical and entertaining book. But R.K Narayan is a Hindu first before being an author. Thus, he couldn't run from the subtle influence of his religion towards his characters and his story line. The Hindu philosophy precludes the philosophy of poetic justice and the theory of realism in his work. Just like the way Hinduism never condemns a sinner, R.K Narayan too refuses to condemn Raju for his worldly wrong doings. Holding on to the true teaching and spirit of Hinduism, Raju was given a chance to redeem himself – which he did.

## References

1. *Bhagavad-Gita As It Is*. The Bhaktivedanta Book Trust: Los Angeles, 1984.
2. Chennakesavan, Saraswathi. *A Critical Study of Hinduism*. Munshiram Manoharlal Publishers, Pte. Ltd.: New Delhi, 1998.
3. Narayan R.K. *The Guide*. Penguin Books: London, 1958.
4. Walters, Donald J. *The Hindu Way Of Awakening. It's Revelation. It's Symbols*. Jaico Publishing House Mumbai: 2001.
5. <http://www.wsu.edu/brians/anglophone/narayan.html>.

# Assessment of Students' Opinion about Computer Science Programme in Outreach Centres of Teacher Training Institutions in Lagos State and the Implications

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## **Abstract**

The need for the use of computer and its related application in Nigeria particularly in the educational institutions have become a *sin qua non* in the present day society. This led to the training of teachers in Computer Sciences in several teacher training institutions. This study appraised the Computer Science Programme of two Outreach Campuses of two Colleges of Education in Lagos State. A sixteen-item (16) Likert-type questionnaire was designed to elicit responses from students with a view to determining the effectiveness of the programme. Two research questions and one hypothesis were raised. A total sample size of 260 was chosen from the two institutions' outreach centres. Findings showed that facilities such as computer systems, internet services, electricity supply, etc. hinders the trainees from training effectively in the respective Outreach centres. Also, the study revealed that there is no significant difference in the training given to trainees in two colleges of education's studying centres. It was therefore recommended that both the National Commission on Colleges of Education (NCCE) and the administrators in Colleges of Education should ensure adequate training to be able to achieve aims and objective the course and colleges were established to serve.

**Keywords:** Outreach Centre, Computer, Teacher Education, College of Education, Training

## Introduction

The computer and its related technologies are now an integral part of everyday life. Computer system is a tool for processing and obtaining information. Computer is the backbone of information technology which has very useful applications in our day to day life. Ajayi and Ekundayo (2009) cited Bandele (2006) who perceived Information and Communication Technology (ICT) as a revolution that involves the use of computers, internet and other telecommunication technology in every aspect of human endeavour. The author posits that ICT is simply about sharing and having access to data with ease. It is regarded as the super highway through which information is transmitted and shared by people all over the world. In the view of Ofodu (2007), the computer is an electronic or computerized device, assisted by human and interactive materials that can be used for a wide range of teaching and learning as well as for personal use. Also, Yusuf (2005) opined that when ICT is used in the field of education, it will shift focus from teacher-centred to student-centred learning, where learners, as active participants in the learning process, produce and share knowledge, and participate and learn in collaboration with others. Thus, making teachers become learning facilitators, collaborators, coaches, mentors, knowledge navigators, and co-learners rather than dispensers of knowledge.

Teaching Computer Applications in educational institutions involve high level demonstrations and interactions between the teachers and students. However, the success of the efforts being made at integrating technology into the teaching learning process will depend strongly on the level of training and support given to the teachers during Pre-service training. According to the National Policy on Education (2004), no education system can rise above the quality of its teachers therefore, there is need to regularly appraise teacher education and teacher training processes to make sure it is up to standard. Also, Odu (2011) opined that any government that encourages its citizens to be creative and innovative must be conscious of the quality and quantity of teachers in the system. Thus, adequate and effective teacher training in computer education is paramount to the achievement of ICT usage in schools and personal life.

To achieve this, Computer Education is offered as a course and taught in the Teacher Education programmes in Nigerian Teacher Training Institutions. Computer Education (or Computer Studies as it is often referred to in pre-tertiary institutions) is taught in primary, secondary and tertiary institutions. In secondary schools, the teaching of computer education is the responsibility of the computer studies teacher. Such teachers would have been trained in tertiary institutions offering Computer Education as a course of study. Such institutions include the Colleges of Education, National Teacher's Institute (NTI), Schools of Education in Polytechnics and Faculties of Education, Institutes of Education and Schools of Post-Graduate Studies in Universities. These teacher training institutions equip teachers who are undergoing training with the required knowledge and skills about the computer, its applications and uses. The Colleges of Education, which are the focus of this study, award the Nigerian Certificate in Education (NCE) to qualified students after completing the training. NCE is the minimum qualification for entry into the teaching profession in Nigeria. The National Commission on Colleges of Education (NCCE), the body responsible for moderating, supervising and designing learning experiences for Teacher Education, provided the training objectives for Computer Education in Colleges of Education. The objectives are that, by the end of the programme, the trainees should be able to:

- i. Teach computer studies at the Primary and Secondary School levels;
- ii. Write programmes and process data with maximum speed and accuracy;
- iii. Demonstrate a reasonably high level of competence in preparation for further studies in Computer Science Education.
- iv. Motivate pupils' interest in the study of computers by appropriately using ICT teaching/learning strategies.
- v. Apply the use of computer as an aid in daily life activities.

The above objectives by implication show that the teacher as a qualified NCE Computer Science graduate will not only be able to use the computer system and its applications, the teacher should also be able to apply the knowledge acquired in Information Communication Technology to his/her daily life especially in the teaching and learning process. A critical look at the set objectives shows that a well trained teacher in line with the stated objectives should be in a good position to achieve the set objectives of teaching and motivating pupils' interest in the study of computer and ICT usage.

To boost the quantity of teachers needed for the teaching and learning of computer studies in primary and secondary schools in Lagos State, the Colleges of Education situated in Lagos State introduced Outreach Centres. These centres are located in strategic parts of the State to make Teacher Education accessible to intending students who live far away from the main campuses of these institutions, irrespective of their locations within the State. Also, such centres remove the barrier to prospective students who may be working full time but wish to acquire Teacher Education. Students enrolled at such centres are to be taught and given educational instructions that are similar in standard to the ones obtainable in the main colleges' campuses of these institutions. The trained and deserving students are awarded the Nigerian Certificate in Education (NCE) as a proof of teaching proficiency in the various subject areas including Computer Science Education.

Thus, outreach centres of Colleges of Education is giving another opportunity to individuals who do not have the opportunity to experience stable education due to circumstances ranging from financial constraint, loss of parents, distance barrier, etc. To achieve the training of teachers in accordance with the set standard, faculties are recruited with the requisite educational background in the respective centre to teach computer students in line with the set NCCE curriculum. Also, adequate learning equipments and infrastructures are expected to be provided for lectures/practical classes. Regular inspection of faculties and equipments in line with the set standard is expected to be carried by the College Administrators at regular intervals during lectures and examination in order to check the activities of the centre heads. Furthermore, the Colleges of Education Administrators in Lagos State towards ensuring standard in the programme organised a uniform terminal semester examination for students across the centres in the state.

Despite the nature of the programme not being a full time programme and lectures carried out outreach centres across Lagos State during weekends (usually Fridays to Sundays), it is expected that graduate from the programme should be able measure up to the standard set by NCCE. Graduates from these outreach centres are expected to have acquired knowledge that will enable them to be able to facilitate students' acquisition of knowledge, skills and attitudes towards computer studies. However, the resources invested in the programme by the stakeholder might not have achieved its stated objectives. College students are often taught without the computer systems and as a result no hands on experience and practical class. Similarly, the remuneration given to lecturers might have affected the quality of teachers. It is against this backdrop that this study seeks to assess students' opinion about Computer Science training in the outreach centres of teacher training institutions in Lagos State.

### **Statement of Problem**

The quality and quantity of teachers produced in teacher training institutions in Nigeria play a paramount role in the quality of education given to children in schools particularly in the area of Computer Studies. Irrespective of the educational programme used to train teachers, it is expected that the teachers have been trained to a criterion that will enable them give quality service while teaching in schools. However, it is observed that Computer Science Students in the Nigerian Colleges of Education Outreach Centres rarely possess and use computer and other ICT applications during their training.

This could have contributed to students' poor application of computer and other computer devices in their daily life activities. Thus, during their teaching expedition, such teachers will not



only find it difficult to motivate his/her student in the study computer but will also find the application of ICT in teaching and learning difficult.

### **Theoretical Framework**

Discrepancy Evaluation Model devised by Malcolm Provus (1973) will guide the study. It seeks to determine the degree of congruence between program standards and actual program performance. The study will highlight the discrepancies which the decision makers in the institutions may use to maintain the program, alter it, or terminate it (Borg and Gall, 1983).

### **Purpose of the study**

The study aims to assess pre-service teachers' perception of training given at the Outreach Centres of Colleges of Education in Computer Education as compared with the objectives stated for the programme.

### **Research Questions**

The study will attempt to answer these questions:

1. To what extent are computer science students in the respective outreach centres exposed to using computer applications and other ICT facilities?
2. To what extent have computers and other ICT facilities been made available for teaching and learning the in outreach centres of the two Colleges of Education in Lagos?

### **Research Hypothesis**

The following hypothesis will guide the study.

1. There is no significant difference between the training provided for the trainees in the study centres of the two colleges of Education.

### **Methodology**

The study adopted a survey research design. The population comprised all Computer Science, 300 level Students of the Federal College of Education (Technical), Akoka and the Adeniran Ogunsanya College of Education, Otto/Ijanikin both in Lagos State, studying at their various outreach centres. The Federal College of Education (T), Akoka has fifty-four (54) outreach centres while Adeniran Ogunsanya College of Education has thirty-five (35) outreach centres across Lagos State.

In order to give every school equal opportunity of being selected, simple random sampling technique was utilized to select twenty-six (26) outreach centres. These centres comprise thirteen (13) from Adeniran Ogunsanya College of Education and thirteen (13) from the Federal College of Education (Technical). Thereafter, ten (10) respondents were selected from each centre. Thus, the sample consisted of two hundred and sixty (260) respondents from twenty six (26) outreach centres across Lagos State.

### **Instrument**

A questionnaire titled Questionnaire on Computer Science Training (QCST) was used to elicit responses from the study sample. The QCST was developed by the researcher. The questionnaire contained 16-items with Likert-type statement with the response mode of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument was given content validation by the researcher in collaboration with colleagues in the area of Measurement & Evaluation. Also, the test-retest method was used to determine its reliability. The process yielded a correlation coefficient of 0.79 for the QCST.

### Administration

The researcher personally administered the questionnaires on the respondents in a bid to reduce undue errors due to extraneous variables. The questionnaires were completed and returned immediately to the researcher.

### Data Analysis

Data collected were analysed using simple percentage, mean, standard deviation and t-test. The hypotheses were tested at 0.05 level of significance.

### Result

Research Question 1: To what extent are computer science students in the respective outreach centres exposed to the training using computer applications and other ICT facilities? To answer this research question, responses of the students who responded to the questionnaire were summarized and presented in Table 1:

**Table 1: Summary of Computer Science Students' Responses on Exposure to Training with the Computer Applications and Other Facilities to the questionnaire items**

SN	Statement	Agree	Disagree
1	Practicals, Assignments and Seminars on the programme are conducted with the use of computer applications periodically.	100 (38%)	160 (62%)
2	Assignments given to us as students are done and submitted handwritten.	213 (82%)	47 (18%)
3	We access the internet during classes for practical lessons and training.	51 (20%)	209 (80%)
4	I've not been trained in the use of search engines (such as google) by my lecturers.	78 (30%)	182 (70%)
5	I visit social network sites (such as facebook or LinkedIn or twitter or Skype, etc.)	208 (80%)	52 (20%)
6	I have no email account which I check regularly.	53 (20%)	207 (80%)
7	My lecturers use computer systems regularly during lectures to illustrate their lessons during lectures.	78 (30%)	182 (70%)
8	There is no adequate time for students to practice the applications on the topics taught by lecturers during classes.	182 (70%)	78 (30%)

From the result presented in Table 1, 100 (38%) of the respondent agreed with the statement 1 which state that practical, assignments, seminars are conducted with the use of computer applications periodically while 160 (62%) respondents disagreed. The response to statement 2 showed that 213 (82%) and 47 (18%) respondents agreed and disagreed with the statement respectively with the statement that assignments given to students are done and submitted handwritten than with the use of applications such as Microsoft Office.

With regard to statement 3, 51 (20%) agreed with the opinion that students access the internet during classes for practical lessons and training while 209 (80%) respondents simply disagreed with the statement. Data presented in respect of statement 4 showed that 182 (70%) respondents disagreed

that students have not been trained in the use of search engine (such as google) by my lecturer while 78 (30%) simply agreed.

Furthermore, responses of the students to the fifth statement on the table revealed that 208 (80%) agreed that they visit social network sites (such as facebook or LinkedIn or twitter or Skype, etc.) and 52 (20%) simply disagreed. Regarding statement 6, 207 (80%) of the respondents strongly disagreed with the opinion that they have no email account which they check regularly while 53 (20%) simply agreed.

With respect to statement 7, 78 (30%) of the respondents agreed indicated that their lecturers use computer systems regularly during lectures to illustrate their topics in classes while 182 (70%) simple disagreed. Regarding item 8, 182 (70%) of the respondents agreed indicated that there is no adequate time for students to experience the application on the topics taught by my lecturer during classes, also 78 (30%) simply agreed with the statement.

Research Question 2: To what extent have computers and other ICT facilities been made available for teaching and learning in the Outreach Centres of the Colleges of Education in Lagos? To answer this research question, responses of the students who responded to the questionnaire were summarized and presented in Table 2:

**Table 2: Summary of Students' responses to the availability of computer and ICT facilities made available for teaching and learning.**

SN	Statement	Agree	Disagree
9	An alternative is provided for electricity supply in cases where there is power outage supply to power the computer systems during lectures.	34 (13%)	226 (87%)
10	There is no special room prepared as a computer laboratory for assessing computer systems and other related applications in my studying centre.	210 (81%)	50 (19%)
11	There is ample time to practice and work independently in the computer room available in my outreach campus.	27 (10%)	233 (90%)
12	The number of computer systems available in my campus is less than the number of computer science students during lectures.	104 (40%)	156 (60%)
13	The Center Director ensures that a computer room is available for computer lessons.	129 (50%)	131 (50%)
14	Electricity Supply hinders me whenever I want to practice what was taught during computer lessons.	175 (67%)	85 (33%)
15	A student to a computer is practiced during computer lesson.	22 (8%)	238 (92%)
16	Students are charged for the purchase of computer systems so as to ensure its availability for classes.	78 (30%)	182 (70%)

From the result presenting in Table 2, 12 (34%) of the respondent agreed with the statement 9 which state that an alternative is provided for electricity in cases where there is no electricity supply to power the computer systems during lectures while 226 (87%) respondents disagreed. The response to statement 10 showed that 210 (81%) and 50 (19%) respondents agreed and disagreed respectively with the statement that there is no exclusive room prepared for a computer room for assessing computer systems and other related applications in my studying centre.

Data presented in respect of statement 11 showed that 27 (10%) respondents agreed that there exist ample time to practice the teaching and work independently in the computer room available in my outreach campus while 233 (90%) disagreed. Besides, responses of the students to the twelfth

statement on the table revealed that 104 (40%) agreed that the number of computer systems available in my campus is less than the number of computer science students during lectures 156 (60%) simply disagreed.

Regarding statement 13, 129 (50%) of the respondents agreed with the opinion that the Centre Director ensures that computer room is available for computer lessons while 131 (50%) simply disagreed. With respect to statement 14, 175 (67%) of the respondents strongly indicated that electricity supply hinders them whenever they want to practice what was taught in computer lessons while 85 (33%) simple disagreed.

Statement 15 has 22 (8%) and 238 (92%) respondents that agreed and disagreed respectively on the statement that a student is to a computer during computer lesson. Lastly, statement 16 has 78 (30%) of the respondent that agreed with the statement that students are charged for the purchase of computer systems so as to ensure its availability for classes but has 182 (70%) of the respondents who agreed with the statement.

### Testing the Hypotheses

There is no significant difference in the training given to trainees in two colleges of education studying centres. The result of analysis in respect of this hypothesis was presented in table 3.

*Table 3: t-test Result in Respect of training given to trainees in the two colleges of education studying centre.*

College	Number	Mean	Standard Deviation	DF	t-cal	t-critical	Decision
AOCOED	130	30.1	2.75	258	0.09	1.96	Accepted
FCE(T)	130	29.9	2.45				

Results on table 3 showed a calculated t-value of 0.09 as a result of training given to students in the two colleges of education studying centre. Since the calculated value of 0.09 is lesser than the critical value of 1.96 given 258 degree of freedom at 0.05 level of significant, the null hypothesis was accepted. Thereby, concluding that there exists no significant difference in the training given in the colleges of education outreach centres.

### Discussion

The study revealed that practical, assignments and seminars are periodically not conducted with the use of computer applications. Rather, assignments and class activities are preferably submitted handwritten. While a better part of the respondents agreed to have been exposed to the use of search engine, the study revealed that practical lesson are done without internet facilities. In a similar report, Ajayi (2008) observed that ICT facilities such as internet and electronic mail which can hinder the effective teaching (by lecturers) and learning of students were not made available for teaching in the Colleges.

Also, the study showed that most of the respondents have emails which they check at regular intervals. Equally, great number of the respondents submitted that computer systems are not used in the teaching and illustrating topics in classes even when the students have time to engage in practice on their own while within the outreach centre campus.

The study also showed that irregular electricity supply is a major challenge facing the colleges of education's outreach centres. The erratic electricity supply, non availability of computer room and computer systems have contributed to the poor attitude of students towards using computer systems for lectures and students practices within the outreach centres. The finding in line with earlier studies carried out by Yusuf (2005), Ofodu (2007), Ajayi and Ekundayo (2009) and Ajayi (2008) which showed that erratic electricity supply in the country has constituted a major impediment to the use of Computer and ICT in various areas in the economy.

In the same vein, the study showed an insignificant difference the training of computer science teachers in the two colleges of education. Though the AOCOED is run under the Lagos State Ministry of Education while FCE (T) is run under the Federal Ministry of Education, their qualities of training are faced with similar challenges. This would contribute to the poor quality of computer science teachers in the nation's primary and secondary schools.

### **Conclusion and Recommendations**

The findings of this study have shown that the quality of training carried in Colleges of Education outreach centres across Lagos State has fallen short of expectation. As a result, no meaningful impact can be made by teachers trained under such condition when they assume the role of teaching in schools.

In spite of the apparent benefits of computer and its related application, several factors are hampering its usage during classroom training of teachers and consequently on the teacher usage in their daily life encounter. Consequently, the colleges of education main campuses, policy makers (such as NCCE, Ministry of Education) and other stake holders should ensure that adequate provisions are made for computer science students in the respective outreach centres. Furthermore, regular inspections and checks of training and instructional process should be carried out in the various outreach centres.

In addition, a room should be provided for the students in the various centres equipped with computer systems and internet access for teaching. Students should be given unrestricted access to room for lectures and practice. Lastly, alternative electricity generating plant should be made available in the respective outreach centres whenever teaching and learning is taking place. This will go a long way in engaging students meaningful with their spare time.

## References

- Aduwa-Ogiegbaen, S. E., & Iyamu, E. O. S. (2005). Using information and communication technology in secondary schools in nigeria: Problems and prospects. *Educational Technology & Society*, 8 (1), 104-112.
- Ajayi, I. A. (2008). Towards effective use of information and communication technology for teaching in nigerian colleges of education. *Asian Journal of Information Technology* 7(5), 210-214.
- Ajayi, I. A. & Ekundayo, H. T. (2009). The application of information and communication technology in Nigerian secondary schools. *International NGO Journal*, 4 (5), 281-286.
- Balogun, M. R. & Yusuf, M. O. (2011). Student-teachers' competence and attitude towards information and communication technology: a case study in a nigerian university. *Contemporary Educational Technology*. 2(1), 18-36.
- Borg, W. S. & Gall, M. D. (1983). *Educational Research* (3<sup>rd</sup>. ed.). New York: Longman Publishing.
- Federal College of Education (Technical) Akoka, Lagos Directorate of Sandwich Programme Handbook. Revised Edition 2012.
- Jegade, P. O. & Owolabi, J. A. (2003). Computer education in nigerian schools: Gaps between policy and practice. *Meridian: A Middle School Computer Technologies Journal*, 6(2), 1-11.
- Kutluca, T. (2011). A study on computer usage and attitude toward computer of prospective preschool teacher. *International Journal on New Trends in Education and Their Implications*, 2 (1), 1-16.
- National Commission for Colleges of Education. Retrieved from <http://www.ncceonline.org/NCCE-Digitization/index.html>
- Odu, K. O. (2011). Human capital development in science and technology education: Challenges and new responsibilities of the teacher. *American-Eurasian Journal of Scientific Research*, 6 (1), 39-46.
- Ofodu, G. O. (2007). Nigeria literary educators and their technological needs in a digital age. *Educational Focus* 1(1), 22 – 30.
- Okebukola, P. (1997). Old, new and current technology in education. *UNESCO Africa*, 14(15), 7–18.
- Timothy, T. (2012). Modelling the influences of beliefs on pre-service teachers' attitudes towards computer use. *European Journal of Educational Research*, 1(1), 13-22.
- Yusuf, M. O. (2005). Integration of information and communication technology in the nigerian tertiary education. *An Online Journal of Africa Education Research Network*, 43 -50.

# A Study of Housing Condition and Its Effects on Quality of Life in Medium Sized City of Nigeria

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## **Abstract**

The aim of this research paper is to assess the housing condition and its effect on the quality of life of Iseyin residents. Database for this research paper originated from questionnaires administered on 388 household heads representing 20% of the total number of household in the town. The collection of data was possible through the division of the entire town into nine administrative centers where each centre is divided into streets. From each street, one out of five houses was selected for this research and the landlord or an important household head was chosen for the interview. Data collected were analyzed using descriptive statistics and the result shows that socio – economic factors of the respondents coupled with age of building, material for construction, infrastructure, quality of residential building and the neighborhood where the house is located all have impact on the quality of life of the inhabitants. The paper suggested that the Healthy City Approach, among others should be incorporated into the action plan for housing development in Iseyin.

**Keywords:** condition of housing, quality of life, medium sized city, Nigeria

## 1 Introduction

Housing is a major goal that needs to be pursued in life because of its centrality in all human activities. Its centrality means that housing provides man shelter, security, privacy and protection, against diseases, infections, accident, injuries and even death. (NISER,2007). Private and public sectors have been trying in diverse ways to ensure that adequate and quality housing is achieved so as to meet the increase in demand for shelter. This increase in demand for shelter often time gives rise to proliferation of unhealthy environment which has impact on the quality of life in most of the developing nations. Thus, the machinery to address the 21st century challenges of urbanization which aims to promote healthy environment and monitoring the directions and speed of urban expansion has largely failed to achieve equitable, efficient and sustainable human settlement leading to environmental related problems such as disasters, diseases, sprawl, poverty and unplanned neighborhoods. It was estimated more than half of the urban population in Nigeria are living in poor condition of housing and unhygienic environment (Agbola 2005, Onibokun, 2004 and UNFPA,1996).

The impact of town planning which is a machinery that controls and monitors the direction of urban growth on mental and health of the urban dwellers is well documented in the 'Healthy Cities Concepts' A healthy city or community is one that embraces the belief that health is more than merely absence of diseases. It includes those elements that enable people to maintain a high quality of life and productivity (Giroult, 1993 and Egunjobi and Agbola, 1996). As comprehensively discussed by (Raphael et al 1996) three important life domains are essential to the overall assessment of quality of life of the people. These are Being Domain, Belonging Domain and Becoming Domain. The physical as well as psychological are embedded in Being domain. The physical being of man includes physical hygiene, nutrition and exercise, clothing and physical environment. While the psychological being are his health and feelings, personal values, standard of conduct and spiritual belief.

Belonging domain includes the person's neighborhood condition such as home, work place, school and community. Others are social belonging such as friends, family, co-workers while the community of belonging is his income, health, employment, educational programmes and community activities. The Becoming domain refers to the purposeful activities carried out to achieve personal goals, hopes and wishes. These are practical activities like domestic, health and social needs. Leisure becoming includes activities that promote relaxation and stress reduction such as card playing, games, visitation, vacations and holiday. The growth becoming activities promotes or maintenances of knowledge and skills. These three domains can be classified as physical, mental and social well being of the people and healthy city is expected to provide the need for all these classifications.

For all these related advantages of healthy city which are embedded in three important life domain, widespread poverty which is a consequence of development on low economic base casts a shadow over the urban development of the developing countries. It was observed that vast majority of the people in urban areas of developing countries cannot afford the basic needs such as shelter, water, sanitation, leisure and good health. Bad housing with poor or non-existent of these services is a common feature of 'poverty, social disruption, environmental disaster and the effects of bad urban planning can quickly expose the vulnerability of the poor' hence thus the three domains became only a dream that could not be achieved thus poor housing is the basic feature of poverty (UNFPA, 1996).

Housing quality is an indicator of neighborhood condition. A bad neighborhood is often characterized by the condition of housing qualities such as abandoned buildings, vacant plots, old and poorly maintained houses, poor interior facilities and inadequate neighborhood facilities for people (NISER 2007). This type of neighborhood has effects on personal psychological and social and physiological well being of the occupants. As it is documented in Wikipedia (2011), poorly



maintained houses are associated with learning disabilities, behavioral and neurological problems, juvenile delinquency, and all forms of hooliganism. Others are severe cases of death, unintentional injuries which are significant among children under 15 and old people. Moreover, smoking generated from cooking with firewood leads to high risks of temperature related diseases such as strokes and exhaustion which resulted in high rate of mortality and morbidity. It was also discovered that the rate of obesity and related diseases are higher in a neighborhood that has no grocery stores or markets that contain healthful food like fruits and vegetables. Additionally, lack of playground for children and recreational facilities, poor lighting or side walk conditions can lead to physical activity related problems such as obesity, diabetes, cancer and cardio vascular diseases.

A quick means of ameliorating these problems is the provision and maintenance of health services embedded in Healthy Cities Concepts. Good health is not merely the absence of disease or infirmity but it is more related to housing and its facilities such as portable water, education, recreation, nutrition, sustainable waste management and others (Egunjobi and Agbola, 1996). Iseyin like any other medium sized city in Nigeria suffers from institutional weakness and therefore cannot provide a timely response to population pressure and rapid urban growth. The result is an unplanned environment with defective and insufficient services characterized by shanty dwellings, squatter settlements and houses too small to allow for a decent family life (Basorun, 2006). For the town to have good quality of life, the health of the people must be taken care of and thus invariably means their housing condition. This study evolved the extent to which housing condition has affected the well being of residents of medium sized city such as Iseyin. A medium sized city is a town with a population of 20,000 to a little higher than 200,000 people (Mid-Sized City, 2009). It will among others examine the housing conditions and quality of life of Iseyin dwellers in the face of inadequate infrastructural and other life supporting facilities.

## **2 The Study Area**

The ancient town of Iseyin lies between long 7°58'N of the equator and lat. 3°36'E of the Greenwich Meridian. It is located in the North of Ibadan, the largest city in the South West Nigeria, 43km North-West of Oyo Township and 89km South of Saki. Based on the population census of 2006, the population of the town was over 255,619 with vast majority of the populace being Yoruba and few Ibos and Hausa. The present estimate is put to be over 271,000 in 2012 at growth rate of 3.9% (National Bureau of Statistics, 2009 and World Bank Report, 2012). The town occupied the most central position of Oyo North District of Oyo State which comprise of all towns in Oke – Ogun, Ogbomoso and Oyo zone. Its centrality therefore serves as an opportunity which can make it the growth centre for development of the towns in the area.

## **3 Material and Method**

The data for this study were obtained from the uses of questionnaire administration and structured interview guide as well as personal observation. The houses and the household indeed represent the sampling frame for this paper. The town was divided into nine areas for administrative purpose by Iseyin Local Government Authority. These administrative areas are Barracks, Koso, Oluwole, Ogunbado, Sawmill, Custom, Isalu, Faramora and Iwoya. Each of these areas was further divided into streets by researcher. A systematic sampling technique was used in collecting data from each administrative area where one out of five houses from each street was chosen and a total of number of 388 representing 20% was finally selected for the survey. A landlord or the oldest household head from each sampled houses was chosen for questionnaire administration and interview guide. Data collected were analyzed with the uses of both descriptive methods. Secondary data were sourced from information from National Population Commission, Internets, journals and Housing Authority.

#### **4 Findings and Discussion**

The research paper is based on the analysis of data obtained from the survey conducted in the study area. Among the information obtained are demographic characteristics of the respondents, housing and infrastructural conditions and the quality of life of the people. The modal age group is 51 – 60 years representing 38.4%. The male respondents represent 57.8% and majority of them are farmers. This shows the extent to which men traditionally dominate the household head in traditional Nigerian household setup. Many of the respondents are within the monthly income of N18, 000 – N25,000 (22%) and followed this is an income level of N25,000 – N32,000 (20.4%). This investigation on income suggests a serious question on the reliability of the income claimed by the people. Judging from the current inflationary trend in the country, it is highly impossible for any household size of 5 to survive on an income of N18, 000 (approximately \$113) per month. This means that with this income level majority of the people in Iseyin cannot afford the basic needs of shelters, water, sanitation and good health.

Majority of the respondents are primary school leavers which represent 39%. This is followed by 24.3% who hold secondary school certificates while 23.5% do not have any formal education at all. The low level of education can be blamed on number of the old and poorly maintained houses which is associated with problem of learning disabilities as observed by Wikipedia (2011). More than half of the respondents (54.1%) have a household size of 1 – 5 people followed by 29.4% who have between 6 – 10 people in their household. The large family usually occurs where the family planning programme is not fully practised. It has been discovered that only 23% of married women in the South Western part of Nigeria where the study area is located is currently aware of modern method of family planning (National Bureau of Statistics, 2009).

#### **5 Housing Quality and Attributes**

A safe and comfortable housing unit for healthy living depending on the site, size, types, quality of the environment, building materials and techniques used. These variables have important bearing on the initial capital cost of maintenance as well as function and aesthetics of the building (Daramola, 2007).

More than half (52.3%) of the housing units in the study area are Brazilian or rooming houses. The traditional Yoruba housing types only represents 19.3% while storey buildings that are rooming houses constitute 8.7%. Others are duplex which represents 4.4%, flats form 7% and hut built by Fulani herdsman constitute 8%. The form or shape of any building is determined by function it performs. Both traditional and rooming houses are found close to the centre which performs the function of residential, commercial as well as the public? It was observed that the bulk of the traditional and rooming housing available in urban centres in Nigeria are mainly in dilapidated and deteriorating condition and unsuitable for habitation. This has been attributed to their age, materials and technology for construction (Basorun, 2006). More than 40% of the houses in the study area were built in over 40 years ago while 20% and 15% of them were built between 31 – 40 years and 21 – 30 years ago respectively while the rest were recently built.

The rooming houses in Iseyin township constitute the highest occupancy (48%) followed by flat housing types (28%) traditional housing (19.3%) and duplex (4.6%). Information on the number of rooms per dwelling unit shows that about 40% and 20% of the respondents claimed that their houses have between 8–10 rooms and above 10 rooms respectively. Additionally, other buildings have between 2 – 4 rooms and 5 – 7 rooms and these are common with modern houses such as flats and duplexes. It was observed that many of these rooms in urban centers residents have been converted to workplaces and other home based activities such as artisans and trading activities without consulting the planning authority. The changes in the use of building in the study area increase the population of users, type of activities operating in them and large numbers of people patronizing the activities. Hence, environmental degradation and problems such as noise, air, water

and land, pollution, traffic congestion as well as overuse of the housing facilities have become the norm in Iseyin Township.

The proportion of household per dwelling unit shows that 26.6% of the respondents indicated that more than five households occupy their housing units. This is followed by 21.1% respondent that claimed that three households are occupying their houses. It was also discovered that more than 50% of the respondent claimed that between 4 – 5 people are occupying rooms in their houses while only 25.3% claimed that 3 – 4 people are living in per room in their houses. The implication of high house occupancy ratio is that majority suffer inadequate facilities such as water, power supply and waste disposal arrangement. More importantly the spreading of contagious diseases such as cough, catarrh, skin infections and cases of stealing of other peoples' properties and money have been associated with this problem in the study area.

## **6 Materials for Housing Construction**

Survey on material used for housing construction shows that 44.3% of the respondents claim that their houses are built with mud wall but plastered with concrete while 30% claimed that their houses are wholly made of concrete wall. Also, 12.9% of the respondents claimed that the material for wall construction is made of mud alone while 11.6% who are mainly Fulani herdsman claimed that wall materials of their houses is made up of thatch alone. The mud walls exhibit cracks that allow reptiles such as lizard, snakes, gecko and rodents like black rats to have access to the room and times insects like cockroaches and ants have access to kitchen and bathrooms sharing food and dwelling places with the occupier.

The type of roofing materials used for buildings in the town range from corrugated iron sheet (77.32%), asbestos (11.6%), aluminums (6.96%) and thatch (4.12%). Many of the corrugated iron sheets especially the old buildings are corroded and leaking and allow rain water to enter into living rooms, parlors and kitchen. With respect to window materials, respondents that claim that wood is the main materials for the making of their window is 47.7% while those that claim that louvers and sliding glass are 18.8% and 33.5% respectively. With regards to ventilation, only 53.3% are fairly ventilated while 46.7% were considered to be poorly ventilated due to the smaller windows especially the old and traditional houses. Since man spends most of his time indoors, adequate ventilation forms major determinant of sound health (Agboola et al, 2007). Also, door materials include 70.5% of wood and 29.5% iron while floor materials include concrete flooring (81.7%), mud floor decorated with cow dung (10.3%) and mud floor without cow dung (8%) of the respondents. The overall structural quality of houses shows that respondents that claimed that their residential buildings are structurally good are 44.6% of those who need minor repairs (20.4%) and major repairs 10.1%.

## **7 In – House Facilities and Services**

The situation with in-house facilities and services in the town is very worrisome, high percentage of 78.1% of the household have no toilet facility but make use of nearby bushes in open spaces and undeveloped plots of land for defecations. Of the population that claimed availability of toilet, 58.2% of the household have water closet toilet built together with their houses while the rest have pit toilet constructed outside the main building. It was observed that many water closet toilets have no soak-away or septic tanks but empty the content through pipe into a nearby stream. During the heavy rainfall especially in the month of July when the town experience double maxima, the water level of the stream is raised, the pipes connected to toilets always serve as channel for water to enter into the houses thereby flooding the houses. Also, the broken pit toilet which was observed in many houses in the course of carrying out this research have become breeding places for vectors that carry diseases like cholera, diarrhea, dysentery etc. Such insects include housefly and cockroach and sometimes animals like mice and rats that feed on human waste are also living in broken pit toilet and these animals are also common delicacy in south western part of Nigeria.

The percentage of respondents that the claim their bathroom is located separately from the building is 59.4% while the rest are in- built bathroom. Those that are located outside the building are constructed with make-shift materials like condemned corrugated iron sheet with no roof on top. Holes and gaps in these corrugated leaves expose the nakedness of any member of the household using the facility thereby encouraging promiscuity among the married and youth respectively. A kitchen should be hygienic because it is the place where food of the family is being prepared and sometimes kept. From the survey carried out, the in-house kitchen constitutes only 61.04% while the rest are built outside the main building. The last group of kitchens is constructed with materials such as wood, mud brick and condemned corrugated iron sheet.

The use of fire wood is a common phenomenon in the town as more than 60% of the respondents makes use of wood and charcoal as a source of domestic energy for cooking. This is the reason why many of the old rooming and traditional buildings have roofs and walls darkened with smoke deposition leading to high concentration of lead and consequently increases the rate of morbidity and mortality. This buttressed the findings that half of the 80% of the world's infant mortality rate which occurred in 25 countries of the world happened in five countries in which Nigeria are inclusive (UN Inter- Agency Group, 2012).

According to the respondents, scarcity of portable water is a major problem in Iseyin township. The household living with in house public water connection is 11.6% and supply comes twice in a week, 9.5% depends on boreholes that are properly maintained while the largest of the respondents (66%) depend on wells as alternative source of water and 12.9% depend on streams for water supply. The incidence of water borne diseases is very acute in the study area as 80% of the respondents confessed that they have been diagnosed of dysentery, typhoid, diarrhea, and cholera.

**Table 1: Distance of Residents from Neighbourhood facilities**

Facilities	Radius (threshold) in (km)				
	1 – 2	3 – 4	5 – 6	7 – 9	10 & above
<b>Education</b>					
Nursery/Primary School	213 (69.2%)	95 (30.84%)	–	–	–
Secondary School	175 (56.8%)	133 (43.1%)	–	–	–
Post Secondary School	–	–	–	–	–
<b>Health</b>					
Dispensary	184 (59.7%)	71 (23.7%)	53 17.2 %		
Maternity	98 31.8 %	127 41.2 %	83 27 %		
Primary Health Centre (PHC)	41 (13.3%)	205 (66 %	62 (20.1 %)	–	–
Private Clinic	72 (23.4 %)	95 (30.8 %)	74 (24 %)	67 (21.8 %)	–
<b>Service</b>					
Post Office	77 (25 %)	139 (45.1 %)	92 (29.8 %)	–	–
Community Bank	120 (39 %)	101 (32.8 %)	87 (28.3%)	–	–
Community Hall	117 (38 %)	93 (30.2 %)	98 (31.8%)	–	–
Recreational Center	117 (38 %)	92 (30%)	42 (13.6 %)	57 (18.5 %)	–

Place of Work	59 (19.2 %)	171 (38 %)	78 (25.3%)	–	–
Shopping Center or Market	79 (25.7 %)	99 (32.1%)	81 (26.3 %)	49 (15.9 %)	–

Source: Author's Field Survey(2012)

### Condition of Housing Environment and Accessibility of Households to Infrastructure and Facilities

Table 1 shows the accessibility pattern of household to various socio – infrastructural facilities and services. The percentage of houses that are located within 1 – 2 km walking distance to the nearest nursery and primary school is 69.2% followed by 30.7% who are located within 4 km away from the same facility. There are not many variations with the secondary school. This seems to be reasonable because the majority of the students are able to walk daily from house to the school whether private or public.

The World Health Assembly Resolution declared that from 2005, everyone should have access to health services and not be subject to financial hardship or distance in doing so. This is the reason why government at various levels responded to this declaration by providing health facilities at affordable cost and walking distance to the citizens. The percentage of household living within walking distance of less than 4 km to health facilities is 83.5% and 73.1% for dispensary and maternity respectively. The only primary health centre (PHC) which serves as threshold for other health centre in the town and the surrounding smaller settlements is located not far from the centre of the town but less than 4km from the majority of the populace. The PHC aims at provision of the services of prevention and treatment of communicable diseases, immunization, maternal and child health services, family planning, public health education, environmental health and collection of statistical data on health and related events. These services could not be sufficiently provided due to insufficient number of medical personnel, deterioration in facilities, poor working condition as well as poor maintenance of vehicles (Abduiraheem, Oladipo and Amodu 2012). This is the reason why there is proliferation of private clinics and health centers in the study area which provide supplementary services at the price that is beyond the reach of majority of the populace

There is only one post – office in the entire township and is centrally located. Also, more than 70% of the respondents agreed that their houses are located within a distance of less than 5km from the nearest bank. Therefore communication and banking services are not problems to the quality of life of Iseyin Community. In terms of recreation, there is only one mini stadium in the town. Many private sectors such as hotel and motels render these services but only the rich and visitors can have access to them. Therefore, physical inability is a common phenomenon and it is estimated to cause about 10-16% each of diabetes, breast and colon cancers as well as ischemic diseases (Alawode, 2012). The percentage of the houses of respondents that are linked by road is close to 48% while the rest are not accessible by road because the effects of town planning were well pronounced. Many of the road are untarred thereby generating dust when they are in use especially during the dry season. Dust accumulates and settles on the wall of the buildings thereby reducing the value of property. Moreso, the dust are also inhaled by the neighbours causes different respiratory related diseases. The untarred roads' surface are dotted with pools of water during the rainy season hence dirty cars, motorcycles and lorry. The advent of the Global System Mobile Communication (GSM) has brought telephone advantages to the residents of the town.

Waster disposal is a major factor in the perception of the quality of life of urban neighborhood and also has impacts on the values of properties (Onibokun 1990). More than half of the respondents (69.8%) dump their domestic waster in unauthorized places such as open spaces, drainage and road side of the town. It is a common phenomenon to see heaps of waste in different corners of the neighborhood. The government waste disposal vehicles are only used once in a month

especially the last Saturday of the month when there is environmental sanitation day declare by the state government.

A safe and secure housing environment is an integral part of what enhances the quality of life of the inhabitants. As much as possible, the environment should be free from various problems such as crime, child abuse and juvenile delinquency e.t.c. From the survey carried out in the study area, it was discovered from the respondents that stealing, robbery and street fighting accounted for over 50% of social problems. Juvenile delinquency is the second identified problem in the town and this accounted for 48.71%. This is borne out of unemployment resulting from loss of fertility of soil in the farmland, land fragmentation as a result of population increase, lack of fund to establish small scale businesses and inadequate vocational education to empower the youth to be gainfully employed.

## **8 Recommendation**

A Healthy City Approach should be employed in order to improve the condition of housing of Iseyin residents and their quality of life. This would lead to the establishment of partnership task force. This taskforce will draw membership from various stakeholders in the development of Iseyin Township such as government agents, private sectors, Community Based Organization(CBN), Non Government Organisation (NGO) and traditional ruler and elites. The partnership taskforce must ensure the cooperation and collaboration of all the stakeholders as they all need the cooperation of one another for maximum benefit to be achieved. According to Onibokun 2006, the private sector and voluntary organization need the government support and the public sector (town planning authorities, Water Corporation, power holding, environmental health department, ministry of works e.t.c) will need the finance drawn from government. The taskforce will work closely with the local government to ensure prompt execution of public infrastructures such as water provision, drainage channels, roads, public toilet, provision of drugs and other health facilities in the government owned health centers. Also, the force should evolve aggressive orientation programmes that will educate the people on the benefit and importance of a healthy residential environment.

Iseyin zonal planning authority must rise up to the challenges and begin to enforce provision of urban and regional decree of 1992. Cases of residential buildings without toilets, bathroom and kitchen facilities in the town should be discouraged in the process of granting development permit for residential building. Also, enforcement of building standards especially the recently approved National Building Codes and the provision of basic amenities will no doubt enhance the quality of life of residents while the environmental health department of the local government must take a firm stand on enforcement of provision and maintenance of toilets and others facilities in residential buildings. The local government should not relent in its efforts to provide more toilets in areas where the facility inadequate as this will save the total lack of toilet facilities. Also, upgrading of the core areas of the city should be encouraged since majority of these buildings only need minor renovation. Above all, the youth should be empowered by providing job through the provision of vocational education for them and given out loans for small scale businesses at low interest rate.

## **9 Conclusion**

The condition of the dwelling place where people reside has profound influence on the overall welfare of the residents which in turn affect their economic, social and psychological well-being of the people. Improved productivity and quality of life of the people depends largely on the quality of the residential houses where they live and availability of facilities and amenities in both houses and the environment where houses are located. This research paper has been able to evaluate the condition of housing in the township of Iseyin. The findings reveal that infrastructures and facilities are generally insufficient, and the quality of housing is while the people themselves are not empowered economically as many are low income earners. Housing condition must be given top most priority as everyone must have access to adequate and decent housing in accordance with the provision of natural housing policy.

## References

- Abdulraheem I. S., Oladipo A. R. and Amodu M. O. (2012). Primary Health Care Services in Nigeria: Critical Issues and Strategies for enhancing the use by the Rural Communities. *Journal of Public Health and Epidemiology* vol. 4(1) pp5-13
- Agbola S. B. (2005). The Housing Debacle. An Inaugural Lecture Delivered at University of Ibadan, Nigeria.
- Agbola T. Nwokoro I, and Kassim, F. F (2007). Housing and Health in Agbola, Egujobi and Olatubara (eds) *Housing Development and Management: A book of Readings*. Department of Urban and Regional Planning, Ibadan, Nigeria University of Ibadan, pp517.
- Alawode D.(2012). Physical Inactivity in Nigeria: A Short Analysis. Available in Alawode Omojuwa.com The Book of Revolution. <http://omojuwa.com/2012/10/physical-inactivity-in-nigeria-a-short-analysis-by-damilola-alawode-dalawode/>
- Basorun J.O. (2006). Basic Elements of Urban and Regional Planning. Akure: Shalom Publishers. p 124 – 125.
- Daramola (2007). Residential Building Design and Costing. In Agbola, Egujobi and Olatubara (eds) *Housing Development and Management, A Book of Readings*. Department of Urban and Regional Planning, University of Ibadan, Nigeria. Pps. 284 – 309.
- Egunjobi, Layi and Agbola Tunde. 1996. Introduction in Agbola S. B and Egunjobi Layi (eds) *Environmental Health and the Potential of the Healthy City Approach in Nigeria*. Proceeding of the first Healthy City Conference in Nigeria. 14 – 16 June 1993, pp 1 – 6. Ibadan, Urban and Regional Planning University of Ibadan.
- Giroult, E (1996). The Healthy City Concept. Process Development and Project Composition in Agbola S. B. and Egunjobi Layi (eds) *Environmental Health and the Potential of the Healthy City Approach in Nigeria*, 14 – 16, Ibadan, Urban and Regional Planning, University of Ibadan. Pp. 8 – 9.
- Mid-Size Cities: Challenges in Europe and in US. This blog hosts the preparatory discussion for 39<sup>th</sup> John Hopkins IUFA Conference. <http://midsizecities.blogspot.com/>
- National Bureau of Statistics (2009). Annual Abstract of Statistics Federal Republic of Nigeria <http://www.efiko.org/material/AnnualAbstractStatisticsFederalRepublicOfNigeria2009.pdf>
- NISER (2007). Understanding Poverty in Nigeria in Housing Perspective. NISER, Ibadan.
- Onibokun A. G. (2004). The Nigeria Urban Sector. The crises of New in an Old Bottle, Ibadan, Nigeria, NISER.
- Raphael D., Rukholm, E., Brown I., Hill – Beniley P., and Donato, E. (1996). The Quality of Life Profile – Adolescent various Background Description and Initial Validation. *Journal of Adolescent Health* 19 (5) pp 366 – 375.
- The UN Inter-agency Group for Child Mortality Estimation (IGME)(2012) <http://www.childmortality.org/>
- UNFPA State of World Population (1996). Changing Places, Population, Development and the Urban Future. [http://www.unfpa.org/swp/1996/box\\_def.htm](http://www.unfpa.org/swp/1996/box_def.htm)
- Wikipedia (2012). Housing Quality and Health Outcomes in United States [https://en.wikipedia.org/wiki/Housing\\_quality\\_and\\_health\\_outcomes\\_in\\_the\\_United\\_States](https://en.wikipedia.org/wiki/Housing_quality_and_health_outcomes_in_the_United_States)
- World Bank Annual Report, (2012) [www.worldbank.org](http://www.worldbank.org)

# The Motivational Factors among Undergraduates Learning Mandarin in A Higher Education Institution

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## **Abstract**

Today, Mandarin is considered an increasingly important international language. Many high schools and universities in many countries throughout the world offer Mandarin as a foreign language. The purpose of this study was to investigate the motivational factors of undergraduate students learning Mandarin as a foreign language at Universiti Teknikal Malaysia Melaka (UTeM). A quantitative analysis was used through motivation inventory as a survey instrument. It involved 147 undergraduate students who were learning Mandarin as a foreign language at UTeM. The findings have shown that future occupation is a major motivational factor for a student to learn Mandarin at UTeM followed by intrinsic value and self-development. The results are important in determining the content of Mandarin learning material. In future more research in different learning contexts should be considered for a deeper understanding of motivation in Mandarin as well as other foreign language learning.

**Keywords:** Motivational factors, motivation, Mandarin, undergraduate, academic achievement.



## Introduction

Following the rapid economic growth of China in the new millennium, Mandarin has become a popular language, as many people are eager to learn the language. Country like Singapore not only fosters the learning of Mandarin among school-going children or teenagers but also among the adults. According to Pak (2012), since 2009 the Singapore government has encouraged its citizens to learn Mandarin by providing them with subsidies. Ainol and Isarji (2009) indicate that “employment situation in Malaysia necessitated the need for graduates to acquire employable skills including proficiency in a third language” (p.74). Therefore, similar to Singapore, Malaysian government also realizes the importance of Mandarin. A majority of Government Higher Institutions (IPTA) and Private Higher Institution (IPTS) in Malaysia offer Mandarin as a foreign language.

In education, approaches to enhance teaching and learning have always been an issue among academicians. It is a reality that learning a foreign language is not an easy task as there are a number of variables that influence the learners which could affect the learners’ language learning outcome. According to Naderi (2009), intelligence, creativity, gender and age are not significant factors in explaining the variance of academic achievement, but self-esteem and dissimilar aspect of creativity are the most significant relationship on academic achievement. Naderi (2009) strongly recommends that future research can be focused on students who show characteristics of attribution theory. Weiner’s (1979) attribution theory is a cognitive approach to motivation. Students with higher self-esteem will have a greater ability to control their lives. When students attribute achievement to controllable causes, motivation to learn is encouraged (Woolfork, 1998). The present study focuses on motivation as a variable because the targeted population in this study has the characteristics described in the attribution theory. Moreover, there is a lack of studies on motivation among students who are learning Mandarin as a foreign language. An educator’s ultimate goal is to motivate students to learn (Kember, Ho and Hong, 2008). Dev (1997) suggests that in order to motivate learners, especially to develop their academic intrinsic motivation, the factors that affect motivation are important to be analyzed in order to cater to their learning needs. By identifying the learners’ motivational factors, learners will enhance their language learning. Hence, it is a high time to investigate the major factors that motivate the undergraduates to learn Mandarin as a foreign language at higher institutions.

Motivation is a combination of effort and desire to achieve the goal of learning the language (Gardner, 1985). A motivated learner will have a positive attitude towards learning as he will be able to identify the fear or apprehension on learning and overcome these obstacles. According to Good and Brophy (1994), learning should be fun and any situation which discourages motivation should be avoided. The more enjoyable the learning process is, the more significant will the students’ engagement be towards it.

This study is significant for its contribution towards theory. Schunk, Pintrich and Meece (2008) have indicated that ‘motivation is the process whereby goal-directed activity is instigated and sustained’ (p.4). Student who have motivation in learning Mandarin are driven to work hard until they are able to achieve their goal in their studies. According to Gardner (1985), the theory of social psychology (intrinsic and extrinsic motivation) asserts that those who inherit higher motivation, especially intrinsic motivation are more likely to perform well. The study, hence, investigates whether the success of students in academic achievement is driven by intrinsic or extrinsic motivation. This study aims to investigate the students’ motivational factors in learning Mandarin so that the potential approaches to enhance their motivation for better academic achievement are identified.

## **Method**

### **Site and Setting**

The present study is conducted in one of the government higher learning institutions in Melaka, Universiti Teknikal Malaysia Melaka (UTeM). The setting of this study is a language classroom of Mandarin.

### **Population and Sample Selection**

The accessible population was closely comparable to the target population in order to establish the validity. The population for this study were undergraduates learning Mandarin as a foreign language at UTeM. A list of undergraduates who registered for Mandarin was obtained from “Sistem Maklumat Pelajar” (SMP). The respondents were students who registered for BLHL 1212 Mandarin I course for a duration of 14 weeks in their second semester 2011/2012. According to the list obtained from the portal, the population was made up of 182 undergraduates. These 182 undergraduates were from six faculties which are the Faculty of Electronic and Computer Engineering (FKEKK), Faculty of Electrical Engineering (FKE), Faculty of Mechanical Engineering (FKM), Faculty of Manufacturing (FKP), Faculty of Information & Communication (FTMK) and Faculty of Technology Management and Technopreneurship (FPTT). To ensure a random selection, the sample for this study was systematically selected using the master list of students, so that each person in the population had an equal chance of being selected. 147 students (59 males and 88 females) were identified for this study. All the sample students were in the range of 20 to 26 years of age.

### **Instruments**

A sample of 147 undergraduates aged between 20 and 26 years took part in the survey. The survey was used to explore the factors that motivated the undergraduates to learn Mandarin as a foreign language. In order to get a reliable and valid data, a ready-made designed questionnaire adapted from Tan et. al. (2008) was used for this survey. The questionnaire was developed based on Self-determination Theory and Social-psychological Theory and its reliability and validity has been proven. For reliability, Cronbach’s alpha value was .90 which is acceptable.

Before the actual survey, the questionnaire was reviewed by the experts to ensure the validity of the questionnaire to measure motivation. Besides, to make sure the questionnaire was suitable for the target setting and sample, a pilot study was done. The questionnaire was pilot-tested with 30 students who were in many respects similar to the samples in the actual study. The questionnaire was divided into two parts; A and B. Part A consisted of items regarding the demographics of the respondents’ personal information such as age, gender and faculty of study. Part B consisted of 23 motivational statements to which respondents were asked to respond on a six-point scale items ranging from 1 (the lowest) to 6 (the highest).

### **Results and Discussion**

The findings present the demographic profile and respondents’ motivation in learning Mandarin. In addition, the respondents’ motivational factors in learning Mandarin were also determined through a descriptive analysis such as mean and standard deviation.

### **Demographic Analysis of Respondents**

The respondents in this study were 147 undergraduates from six faculties namely FPTT, FTMK, FKEKK, FKM, FKE and FKP. The respondents were chosen from both male and female consisted of the Malays, Indians and others. Table 1 shows the demographic analysis of 147 respondents aged between 20 and 26 from six different faculties.

**Table 1: Demographic analysis of respondents**

Demographic	Frequency	Percentage
<b>Faculty</b>		
FPTT	105	71.4
FTMK	10	6.8
FKEKK	22	15.0
FKM	8	5.4
FKE	1	0.7
FKP	1	0.7
<b>Age</b>		
20	6	4.1
21	68	46.3
22	32	21.8
23	21	14.3
24	10	6.8
25	6	4.1
26	4	2.7
<b>Gender</b>		
Male	59	40.1
Female	88	59.9
<b>Races</b>		
Malay	136	92.5
Indian	7	4.8
Others	4	2.7

N=147

A total of 147 respondents were selected randomly as the sample for this research. They comprised 105 (71.4 percent) students from FPTT, 10 (6.8 percent) FTMK, 22 (15 percent) FKEKK, 8 (5.4 percent) FKM, 1 (0.7 percent) FKE and 1 (0.7 percent) FKP. The majority of the respondents were in the age group of 21 years which consisted of 68 people (46.3 percent) of the total number of respondents. The analysis showed that 59 (40.1 percent) male students and 88 (59.9 percent) female students participated in this study. The majority of the respondents were Malays consisting of 136 students (92.5 percent). There were 7 (4.8 percent) Indian respondents and others were 2.7 percent.

### **Analysis of Respondents' Motivation in Learning Mandarin**

The respondents have motivation in learning Mandarin because the undergraduates who have greater interest in Mandarin are motivated to register for Mandarin as their elective subject. Table 2 shows the analysis of respondents' motivation in learning Mandarin.

**Table 2: Analysis of respondents' motivation**

<b>Mean</b>	4.82
<b>Std. Deviation</b>	.61

N=147

The findings showed that UTeM students were moderately motivated in learning Mandarin. The mean was 4.82 and the Standard Deviation was .61. With the highest score at 5-6 and the lowest at 0-1, the mean score of all the 23 items in the motivation inventory was 4.82 which was between agree slightly and agree moderately. As the undergraduates must take one of the foreign languages as a compulsory elective subject, students who have greater interest in languages will choose Mandarin as their elective subject and enjoy learning throughout the semester. They can join any of the Mandarin class after getting the permission of the lecturer concerned. They also have the choice to

decide the topic of assignment in the studies as one will be motivated if one has the power to determine what to learn, how to learn and when to learn. Students who have the choice to determine will usually do better in learning. This is supported by Brooks and Young's (2011) study which found that students who have a choice on assignment and choice on attendance to be more motivated. Moreover, Woolfolk (1998) asserts that, "Results of some studies show that when students feel more like origins and less like pawns, they have higher self-esteem, feel more competent and in charge of their learning, score higher on standardized tests, and are absent less." (P.385). These view is supported by Deci's (1985) self determination theory which indicates that competence is related to intrinsic motivation if there is a choice to self-determine. According to the theory of self-determination, those high in intrinsic motivation will be those who can control their own learning. The present study adopts the theory of self-determination.

### Descriptive Analysis

Motivation inventory is used as a survey instrument. The motivation inventory consists of 23 motivational statements. Table 3 below shows the descriptive analysis for 23 items.

**Table 3: Descriptive analysis for 23 items of the questionnaire**

Items	Question	Mean	Std. Deviation
1	It will enable me to better understand and appreciate art and literature.	4.62	.86
2	I want to sing / listen to Mandarin songs.	4.24	1.17
3	Learning Mandarin is an exciting challenge.	5.13	.88
4	It will allow me to be more at ease with my Mandarin-speaking Chinese friends.	4.83	.96
5	I really like learning Mandarin.	4.89	.97
6	I need to fulfil the university foreign language requirement.	4.54	1.09
7	Learning Mandarin is interesting and stimulating.	4.86	.87
8	I want to understand the Mandarin program on TV and Mandarin movies.	4.90	.94
9	I feel happy when I can accomplish difficult Mandarin exercises.	4.99	1.0
10	It will strengthen my relationship with my Mandarin-speaking Chinese friends.	4.78	.89
11	It is good for my personal development.	5.16	.91
12	I may need it for my future career.	5.49	.73
13	I feel proud when I can say something in Mandarin.	5.31	.85
14	China is expanding its influence in the world economy and politics.	4.93	.89
15	I want to speak Mandarin.	5.26	.89
16	I will be able to take part actively in the activities of the Chinese community.	4.58	.96
17	It can make me a knowledgeable person.	5.16	.87
18	I want to visit China and Taiwan.	4.79	1.07
19	Learning Mandarin has become my hobby.	4.20	1.05
20	It will allow me to meet many people from different background.	4.66	.95
21	It is easy to get good grades.	4.08	1.29
22	I think it will someday be useful in getting a good job.	5.16	.95
23	I need to study a foreign language as my elective course.	4.73	1.06

N=147

The most disagreed item from the respondent was item 21 “It is easy to get good grade” with a mean of 4.08 and standard deviation of 1.29. While the most agreed item from the respondents was item 12 “I may need it for the future career” with a mean of 5.49 and standard deviation of .73. The findings are similar to the result obtained by Tan and Ooi (2006) as they also discover that the two most positive responses for learning Mandarin from non-Chinese undergraduates are “I may need it for my future career” and “I think it will someday be useful in getting a good job”.

### Summary and Ranking Of the Motivational Factors

The questionnaires were sent out to 147 respondents for data collection. The questionnaire consists of 23 items which is divided into 6 subscales as shown in table 4.

**Table 4:** Items in the subscales

Subscale	Item no
Chinese culture and community	1, 16
Entertainment, Chinese Influence and Travel	2, 8, 14, 18
Intrinsic value and self-development	3, 5, 7, 9, 11, 13, 15, 17, 19, 21
Friendship	4, 10, 20
Requirement motivation	6, 23
Future occupation	12, 22

The questionnaire consists of 6 motivational factors. Each factor refers to a subscale in the motivation inventory. Table 5 shows the summary and ranking of the six motivational factors.

**Table 5:** The summary and ranking of the six motivational factors

Motivational factor	Mean	Std Deviation	Ranking
Future occupation	5.33	.76	1
Intrinsic value and self-development	4.90	.68	2
Friendship	4.76	.77	3
Entertainment, Chinese Influence and Travel	4.71	.69	4
Requirement motivation	4.64	.94	5
Chinese culture and community	4.60	.78	6

N=147

The findings showed that future occupation was a major motivational factor for students to learn Mandarin at UTeM followed by intrinsic value and self-development. The friendship factor was ranked third. The motivational factor of Chinese culture and community was ranked last. These findings were similar to Tan et.al (2008) study which found that ‘future occupation’ and intrinsic motivation plus self-development’ were the strongest learning orientations among the students in learning Mandarin at a public university in Malaysia.

Ainol and Isarji (2009) also found that students reported a high mean percentage of agreement with the motivation to learn a foreign language for extrinsic reason with the three most agreeable items of the respondents were ‘I will need it for my future career’, ‘I think it will make me a more knowledgeable person’ and ‘I think it will someday be useful in getting a job’.

However, the findings gained from research done in the West or other countries were different compared to the current findings. Du (2008) conducted interviews in a Mandarin language classroom. In his study, ‘interested in the language’ was found to be a major reason for student to learn Mandarin at Midwestern Urban University with ‘personal enrichment’ in the second place. ‘Interested in culture’ ranked third while ‘job perspectives’ ranked last. These results are similar to Wu’s (2010) which found that friendship and appreciation of culture are the motivational factors of Chinese languages learners. In short, the above comparison of findings shows that Malaysian and foreign students are driven by different motivational factors to learn Mandarin as a foreign language.

## Conclusion

In conclusion, the findings of this research are encouraging because the results show that UTeM students are moderately motivated in learning Mandarin. Moreover, the undergraduates are driven to learn Mandarin because of the needs for future career followed by intrinsic value and self-development. Mastering Mandarin as the communication tool in the future was important to them. Hence, teachers are encouraged to make more effort in fostering motivation in the classroom. As an educator, we should try to cater to the needs of the students in designing the scope of learning as well as the teaching methodology. The findings are important for curriculum designers in determining the suitable content for Mandarin. This study is also significant for its contribution towards practices. The research results can be used by the Mandarin language instructor to improve the teaching and learning of Mandarin in universities. As motivation for individuals varies according to time and context, more research in different learning context should be considered for a deeper understanding of motivation in foreign language learning.

## References

- Ainol Madziah Zubairi & Isarji Hj Sarudin. (2009). Motivation to learn a Foreign Language in Malaysia. *GEMA Online Journal of Language Studies*, 9(2), 73-87.
- Brooks, C. F. & Young, S. L. (2011). Are choice-making opportunities needed in the classroom? Using self determination theory to consider student motivation and learner empowerment. *International Journal of teaching and learning in higher education*. 23(1), 48-59.
- Deci, E. L. & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: plenum Press.
- Du, W. H. (2008). Integrating Culture learning into foreign language curricula: An examination of the ethnographic interview approach in a Chinese as a foreign language classroom. University of Wisconsin-Milwaukee.
- Gardner, R. (1985). *Social psychology and second language leaning: The role of attitudes and motivation*. London: Edward Arnold.
- Good, T. & Brophy, J. (1994). *Looking in the classroom*. (6<sup>th</sup> ed.). New York: Harper
- Kember, D., Ho, A. & Hong, C. (2008). The importance of establishing relevance in motivating student learning. *Active Learning in Higher Education*, 9(3), 249-263.
- Naderi, H. (2009). Relationship between intelligence, creativity, self esteem and academic achievement among Iranian undergraduate students in Malaysia Universities. Universiti Putra Malaysia.
- Pak, J. (2012). Is English or Mandarin the language of the future.  
<http://www.bbc.co.uk/news/magazine-17105569>
- Accessed on 11 July 2012
- Pintrich, P. R. & De Groot, E. V. (1990). Motivational and self-regulated learning components of classroom academic performances. *Journal of Educational Psychology*, 82(10), 33-40.
- Schunk, D. H., Pintrich, P. R. & Meece, J. L. (2008). *Motivation in Education: Theory, Research, and Application*. Upper Saddle River, N. J.: Pearson Merrill Prentice Hall.
- Shia, R. M. (n.d.). Assessing academic intrinsic motivation: a look at student goals and personal strategy. Wheeling Jesuit University.
- Tan, T. G., Hairul Nizam Ismail & Muhamad Kamarul Kabilan Abdullah (2008), Motivational factors of Malay students learning Mandarin: An exploratory study. Universiti Sains Malaysia.
- Tan, T. G. & Ooi, A. K. (2006), Motivation of Malay students towards learning Mandarin as a foreign language. Proceedings paper of the second CLS international conference (CLaSIC) 2006. National University of Singapore.
- Weiner, B. (1979). A theory of motivation for some classroom experiences. *Journal of educational psychology*, 71, 3-25.

Woolfolk, A. E. (1998). *Educational psychology* (7<sup>th</sup> ed.). United state of America: Allyn and Bacon.

Wu, M. F. (2010). An Exploratory Study of The Language-learning Preferences and language-Learning Motivation of ESL Learners at a Vocational Education Institut in Hong Kong. *Electronic Journal of Foreign Language Teaching* , 7(1), 222-238.



# Girly Girls, Tomboys, Jocks and Nerds: Gifted girls and boys experience of the specialized school environment.

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## **Abstract**

This study uses a phenomenological framework to discover from elementary aged gifted girls and boys themselves whether they experienced the social context of their specialized school differently. The gender identities of the three schools in this study were found to play an important role in the creation of a positive or negative social context, which ultimately impacted the talent development process. A review of the research literature found that while there has been research carried out in this area at the secondary school level, not much is known about the impact of social context in the specialised school environment at the elementary school level. This study also differs from other studies in this area in that a phenomenological framework was used which allowed the voices of the children themselves to predominate. Participants at schools that supported stereotypical gender identities were found to be more likely to deny or mask their atypical abilities. These participants generally perceived that they had to choose between social relations or their academic development. Participants at schools that fostered a gender free environment were more likely to accept giftedness as part of their identity. Despite this positive outcome, societal messages were found to influence the positive or negative experience of the gifted label.

**Keywords:** gifted boys, gifted girls, stereotyping, social coping strategies, social context, specialised school environment.

## Introduction

All children are expected to conform to roles dictated by society that are linked with age, race and gender. The gifted child has the added difficulty of being out of sync, not only with expected age expectations, but often with gender role stereotypes as well (Coleman & Cross, 2005, Cross, 2012). When one considers the stereotyping of gender and giftedness in the media, coupled with the gendered and gifted stereotypes perpetuated in many schools it is not surprising that many gifted students mask their unique abilities.

Earlier research has indicated that the media, (for example television and magazines), has played an influential role in the development of children's stereotypical gender attitudes and beliefs (Calvert, 1999; Herrett-Skjellum & Allen 1996). Media formats, however, have changed a great deal in the last few years with the inclusion of the "new media", for example, the internet, music videos, video and computer games, iPod, MP-3 players as well as DVD's. Research has, however, only recently examined the part new media plays in the gender role socialisation process. Previously research in this area concentrated instead on the correlation between violence in video games and aggressive behaviour (Anderson & Bushman, 2001, 2002). Present-day research findings in this area suggest that gendered messages not only continue to be reinforced in the media, but play an even more prominent role than previously experienced (Saltmarsh, Robinson & Davies, 2012). This is perceived to be largely due to their interactive nature, wide variety of viewing platforms (laptops, mobile phone and game players) as well as their ability to be replayed over and over again. (Starr & Ferguson, 2012; Smith, Pieper, Granados & Choueiti, 2010; Rideout, Foehr, & Roberts, 2010).

A reading of current research literature in the new media suggests that females are more likely than males to be portrayed in a hypersexual way and continue to be less likely than males to be depicted in leadership roles (Conrad, Dixon, & Zhang, 2009; Saltmarsh, 2009). The few times women do take a leadership role they continue to be portrayed in a stereotypical, ultra-feminine way with an unrealistic body image (Lee, 2008; Levine & Murnen, 2009). These types of gender messages may cause conflict for the gifted girl who may on the one hand may wish to develop their abilities to their true potential and on the other feel the need to conform to the stereotypical female role supported by the media, family and many school environments (Silverman & Miller, 2009). Gifted girls, with their advanced ability to read social cues, quickly learn that if they seek leadership roles or academic excellence they are likely to be labelled bossy or unfeminine (Kerr & Larson, 2007). Indeed, research has indicated that gifted girls are so proficient at hiding their ability that many simply disappear by middle school (Reis, 2003). The gifted girls' decisions to mask their unique ability should come as no surprise if we consider research results that states that gifted girls are likely to be the most unpopular students in the typical school environment (Kerr & Foley Nicpon, 2003).

While passivity and beauty are emphasised as important qualities in females by the media, boys are encouraged to be athletic, assertive and to take on a leadership role (Smith, Pieper, Granados, Choueiti, 2010). The perpetuation by the media of stereotypical masculine ideals has been perceived as further entrenching adherence to the "Boy Code" in many of our schools (Smith, 2007; Dally-Trim, 2007). Pollack (2002) coined the "Boy Code" to describe a set of antiquated unspoken rules reinforced by society. These rules dictate that a boy never show any type of vulnerability or emotion other than anger. Indeed, boys demonstrating any type of sensitivity or desire to participate in activities deemed feminine are likely to be teased or bullied (Freeman, 2007; Sandholtz & Sandholtz, 2010). Gifted boy then may be at a distinct disadvantage with peers, in school environments that reinforce the media's stereotypical perception of male identity as research highlights sensitivity, as a key gifted characteristic (Herbert, 2011; Smith, 2007). Gifted boys in this type of social context may have to choose between developing their talents and risking social isolation from peers or conforming to group pressure by camouflaging their ability (Chan 2005; Dalley-Trim, 2007; Herbert, 2011).

### Influence of school setting on gender socialization

In addition to the media, gifted girls and boys are also influenced by the social context of their schools in their perception of gender role identities and attitudes (Cross, 2012). The social groups at the school form the social context, which impacts the types of gender identities accepted by peers (Coleman & Cross, 2005; Eddles-Hirsch, Vialle, Rogers & McCormick, 2012). Gifted girls and boys may therefore interpret giftedness as acceptable or unacceptable to their gender identity depending on the social context of their school (Silverman & Miller, 2009). If it is unacceptable, the gifted child may be faced with the difficult dilemma of having to choose between social acceptance and development of their atypical abilities (Foust; Hertberg-Davis & Callahan, 2008). The specialised school has been perceived by many in the gifted education community, as settings where unique social contexts can be created that celebrate rather than reject diversity (Coleman, 2005). The purpose of this study was to discover how the social context (which includes gender and gifted role messages) of three disparate schools environments impacted the talent development process of elementary aged gifted students at the grade 4, 5 and 6 level.

### Method

This study attempts to address the following research questions:

### Research Questions

The research questions that guided this study were:

1. How do elementary aged gifted students experience the social contexts of schools that actively seek to cater to their atypical academic needs?
2. What differences exist in the way gifted girls and boys experience the social context of schools that provide them with extension classes?

### Participants

Table 1: School populations, types, grade levels and participants

School and student popl	<b>Rosemount: 8</b> (co-educational) 800	<b>Clareville:8</b> (single sex boys school) 1, 500	<b>St Anne: 8</b> (single sex girls school) 1,000
Grade 6	Pseudonym Essie, Nicole, Kane	Pseudonym Aaron, Bradley, Robin	Pseudonym Bree, Misty, Clara
Grade 5	Cameron, Billy, Shay, Amity	Sam, Nick, Oliver	Amy, Melinda, Jennifer
Grade 4	Maddy, Oliver	Jason, Sebastian,	Emily, Cassie

Twenty-five participants were sought from the Grade 4, 5 and 6 that had experienced the phenomenon of being gifted in a school environment that purposefully catered to their atypical academic needs. Students were selected from the gifted programs of three independent Sydney suburban elementary schools that purposefully set out to cater for their gifted student populations' atypical academic needs. Nine boys were selected from "Clareville College", a private, single-sex boy's school. An equal number of girls came from "St Anne" a single-sex private girl's school. Five girls and four boys came from "Rosemount House" a co-educational school. Informed consent forms were collected from all participants.

## Setting

Three different types of gender settings were purposefully selected for this study in order to gain insight into whether gifted elementary aged girls and boys experience differently the social context of schools that provide them with gifted programming. All three schools were selected as they offered a specialised programming to their academically advanced students.

### Co-educational school: Rosemount

Rosemount describes itself as one valuing academic excellence, lifelong learning, and community. It has a smaller student population than the other two schools in this study. The gifted program consists of an opportunity class (OC) for students in Grades 4, 5 and 6, single subject and Grade acceleration and differentiation of the curriculum. Criteria for entrance into the schools gifted program incorporate objective measures such as standardised and off level testing, as well as subjective measures such as peer, parent and teacher nomination.

### Single-sex girls' school: St Anne

St Anne's has a student population of 1000 and describes itself as one that values respectfulness, lifelong learning and an education in the arts. It offers a flexible gifted program, acceleration and a differentiated in class curriculum. Giftedness was determined at St Anne by using a diverse range of both subjective and objective measures such as peer and parent nomination and off level testing.

### Single-sex boys' school: Clareville

Clareville College, like St Anne's, is a private single sex school, but has a larger school population with 1500 boys attending the school. It describes itself as a school that motivates its students both academically and athletically. Indeed, it had the largest co-curricular program of schools in this study. The gifted program consisted of weekly Maths and English pull out programs. Criterion for entrance into the program was solely an IQ score of over 140.

## Procedure

Data was collected through individual in depth interviews, carried out in the participants' schools. Two interviews were carried out with each participant, with both interviews lasting approximately 45 minutes, but no longer than an hour. Interviews were tape recorded with the participant's consent and transcribed at a later date.

Open ended guiding questions were the same for each participant and were worded to encourage each child to begin describing his or her perceptions of understanding of the lifeworld or meaning of everyday experience of their school day.

These included:

*Can you describe for me what it is like to attend (name of school) from the time you arrive to the time you leave?*

*If you were to describe to a new student what it is like to attend your school what would you say?*

The participants' perceptions of their experiences remained intact due to the phenomenological method of *bracketing or epoche*. This is when the researcher purposefully sets aside any preconceived knowledge or everyday beliefs he or she believes might be used to explain the phenomena being investigated. This allows the researcher to listen and record the participant's description of an experience in an open and naïve manner (Groenewald; 2004).

Findings were also drawn from field notes gathered during the participating schools scheduled recess and lunch breaks, as well as during participants' class time. Member checking was

carried out with all participants after both the initial and final interviews. The participants were largely from well- off socioeconomic families, but came from a many cultural backgrounds.

### **Data Analysis**

The data were analysed by following a series of steps modified from Moustakas' (1994) and Giorgio's (1985) phenomenological research approaches. The initial step was to read each interview 3 to 4 times and to mark statements that were relevant to the research questions. These important statements (meaning units) were recorded and then clustered into themes for each participant. These themes were then used to create rich textural descriptions which reflected each participant's personal experience of the phenomena researched.

Composite thematic units were then collected and charted for each school. Themes raised were tallied and organised in order of importance to participants for each school. These were used to create composite textural and structural descriptions for each school. Finally, the composite and structural descriptions were synthesised into a general description that revealed the essence of the phenomenon researched. The phenomenological method of epoche was carried out at each stage of the data collection and analysis process.

Three common themes that emerged from the findings were (1) Peer Relations, (2) Challenging Curriculum and (3) Power. These themes represent the underlying structures or essences of what it is like to be a gifted child in a school that purposefully endeavours to cater to its gifted population's academic needs. These essential themes were arrived at from phenomenological analysis of the participants' lived experiences of specialised school environments. These common themes among the schools will be analysed in order of prevalence to the participants to show how the social contexts of the three schools impacted the participants' gender expectations and social coping strategies.

### **Results**

#### ***Theme 1: Peer Relations***

Both male and female participants at Rosemount school perceived that it was easy for them to make friends both within and outside of the Opportunity Classroom (OC). When the participants described their school, they used terms such as welcoming and one big community and games as open to everybody. For example, Essie, in Grade 6 described the school as: *A kind of a big family where every single person knows pretty much everyone*. Indeed, both male and female newcomers to the school were vocal about how different Rosemount was from their previous school environment with some of them stating that they had been able to make friends for the very first time. Amity, who was in Grade 5 described the comparison between her old and new school environments as follows: *At my old school a lot of people judged you, but at this school you don't get judged as much, you feel more welcome. When I walked in everyone was smiling and I was like everyone is smiling this is amazing*.

The Rosemount school environment was described as a setting where a variety of gender identities were accepted by peers and promoted by school staff. For example, Shay, in Grade 5, described her teacher's opening message to the class...*this class is a gender free zone, you won't be judged on what gender you are, we're all equals*. Participants new to the school were particularly surprised by the openness between genders on the playground: *The boys and girls they didn't really interact (at old school), but here the girls play soccer and the boys play handball and we interact heaps. Here it's just all open* (Kane, Grade 6, Rosemount). Girls, as well as non-sporty boys were perceived as being welcome in all sports games with ability level and age generally not being seen as a requirement for play. Participants also believed that boys who did not like sport had a variety of playtime choices. For instance, they could play chess, attend a variety of clubs such as the robotics, Jazz or Animal Welfare club, talk with friends or play computer games in the library. Students were also encouraged to take part and celebrate student success in a wide array of activities, for example

sporting event, school academic and creative writing competitions. This multi-dimensional perception of students' talents and interests may have fostered the positive attitude held towards both the non-athletic boys and females by male participants at this school

While conflict was accepted as part of school life, aggression was not accepted by either peers or teachers at Rosemount. The male participants new to the school were particularly aware of the lack of aggression on the playground. Billy in Grade 5, who was a newcomer to the school, described the playground difference as follows: *The boys are nicer, at my old school they weren't. They were short-tempered and very aggressive and would hurt you. This school it is not like that* (Billy, Grade 5, Rosemount). Indeed both female and male participants at Rosemount spoke about a variety of strategies they had been taught by teachers at the school to solve conflict by themselves on the playground.

The Clareville participants held very different perceptions about gender identity and what it was like to be gifted at their school. Indeed, six of the eight participants generally believed that it was best to hide academic acumen until sporting ability had been demonstrated on the playground. Boys who did not follow this process they perceived were likely to be teased and be isolated from playground games. Jason in Grade 4 had personally experienced this process and described how he had no one to play with and believed that the boys "*were not friendly and would not let you join in*". He explained that sometimes he was able to participate in the big games of soccer and cricket when the others boys did not realise that he had entered the game. Boys engaged in extra-curricular activities not perceived as masculine could also expect to be teased and in some cases bullied. For example, Sam in Grade 5 described how he felt passionate about singing in the school choir, but feared being teased when he attended choir practice, especially by the "*big boys*" in the high school. Participants generally believed that boys at the school associated academic capability and study with feminine pursuits. Boys who achieved well academically were therefore at a distinct disadvantage of being labelled unathletic by peers. This meant that if accepted on the playground they would be confined to the handball group, as this game was considered to be a good fit for unathletic boys as it was nonaggressive and required little skill. Bradley in Grade 6 described handball group make up as follows: "*Boys that are quite smart and study a lot.*" (Bradley, Grade 6, Clareville). Boys considered athletic on the other hand were expected to participate in the skilled and physical sports games such as touch football, soccer, cricket and basketball.

It is interesting to note that six out of the eight gifted students at Clareville were restricted to the handball courts at playtime. One of the two participants that took part in the more athletic games had originally been confined to the handball courts until his peers became aware of his State cricket sporting status. Indeed, newcomers to the school described being especially lonely when they first came to the school, as no groups were open to them while peers decided if they belonged to the sporty or non-sporty group.

Unspoken rules that governed playground behaviour and communication were also described by participants. For example, boys were expected to win the sports games they participated in at all costs. In point of fact playground games were described as highly competitive and often aggressive: *They get really competitive and also on some occasions violent, because they always want to win* (Nick, Grade 5, Clareville). Communication amongst boys was also expected to remain light and humorous. Boys not adhering to these playground expectations, for example demonstrating sensitivity or tearfulness, were likely find themselves isolated from playground groups. For example Jason in Grade 4, described a boy who had become a social isolate on the playground due to tearfulness: *They just don't like it when he cries, it didn't happen much maybe four times.*

Participants at St Anne, the single sex girls' school, were aligned with their Rosemount peers in their belief that their giftedness did not interfere with peer relations. They, however, differed, from these participants' experience of the gifted label, as due to the flexibility of their gifted programs, they perceived that no students at their school were labelled gifted or non-gifted. While the St Anne

participants were comfortable with their giftedness they like their Clareville peers believed that their playground was organised hierarchically. Popularity, however, was not governed by athletic capability, but instead by the girly girls who were described as being overly interested in fashion and their physical appearance: *Girly girl, like all the, ooh I'm going out on Saturday or something like that or about the new type of nail polish* (Anna, Grade 5, St Anne). This group was recognised as unfriendly and hard to get into: *There's one group that is into fame and fashion and stuff and they'd be a bit apart that group, but they are not very nice those girls. They are a bit cool and judgemental* (Bree, Grade 6, St Anne). While this group was recognised as trying to influence the way girls looked, as well as their extra-curricular activities they were not perceived as having any influence on academic extension. Participants perceived that girls who were sporty and more active on the playground were generally seen as tomboys: *Tomboy, which means you're more boyish and you just hang around you know doing sort of more boyish things that girls usually wouldn't you know* (Melinda, Grade 5, St Anne). None of the female participants at Rosemount described a playground group that either displayed or coerced other girls to conform to societal stereotypes of femininity.

The St Anne participants believed that while groups on their playground were generally friendly, groupings were structured. Group structure was not perceived to be governed by interests alone, but by strong friendship bonds, girls were therefore upset, if a member decided to change groups: *It's quite structured in a way; it would be thought to be a bit strange if you went and sat with like another group. They would be upset and stuff* (Clara, Grade 6, St Anne).

Despite the similarity in group structure at both the single-gender schools, participants at St Anne described very different play interests. While girls who identified themselves with the tomboy groups still enjoyed a more active break time, there were no organised sports games observed or described as taking place on the St Anne playground. It was generally believed by participants that girls who had a sporting interest participated out of school sporting clubs, as they offered more variety and a higher standard of play. Misty, in Grade 6, described the reasoning behind this choice as follows: *I play out of school, because I've played for a while and everybody knows how to play, whereas in school they don't. Like if I hadn't played soccer before, I'd probably do it with school* (Misty, Grade 6, St Anne). It is interesting to note how lack of a compulsory sports program may have affected playground games, as not one ball game was observed on the St Anne school playground despite several visits to the school.

### ***Theme 2: Challenging Curriculum***

The Rosemount male and female participants were not only comfortable playing together, but were also happy to work together. Kane in Grade 6 described group work as follows: *I've got one or two boys and one or two girls that are about the same level as me, so we can work together really well* (Kane, Grade 6, Rosemount). Both genders were encouraged not only to take part in various sporting events, but outside of school academic and creative writing competitions as well. Participants were also unanimous in their descriptions about the positive impact challenging instruction had on them. For example, Amity in Grade 5 perceived schoolwork as a, *lot more challenging and it's more fun to do*, whereas Cameron, Grade 5, believed that he learnt, *new things every day, it's really good. Normally the work that we're given is like perfect for our academic level*. A more demanding curriculum was not only described as academically empowering, but the chance to work with likeminded peers was also described in positive terms. Indeed some of the participants that were new to the school described how they had felt lonely at their last schools in some cases both in the playground and inside the classroom, as they had been expected to work alone on an advanced curriculum. Working and communicating academically with like-minded peers was described as a rewarding experience by both male and female of the participants: *I have people that understand me in subjects* (Shay, Grade 5, Rosemount). The male and female participants at Rosemount school, however, generally held different perceptions about the level of stress experienced in the OC classrooms. For example, the male participants described classroom competition, as fun and friendly and the standards set as not out of their reach, whereas three out of

the five female participants generally described it in stressful terms. The female participants at Rosemount school were more concerned than their male counterparts about standing out and being different from the rest of the group. For example when they were required to call out grades or have work they were not proud of displayed in their classroom: *I don't know why our teacher makes it so obvious. Well most of the time she displays people's marks all over the classroom and then whenever we hand in a piece of work, she just marks it, she gets out her mark book and most of the time, you can see very clearly what everybody else's marks are, because they are all in a row* (Nicole, Grade 6, Rosemount). The majority of stressful circumstances, however, described by female participants at Rosemount referred to where found to be influenced by external factors rather than internal based. For example, they described situations where grades were made public to peers. While this finding correlates with previous research on the types of social coping strategies employed by older academically advanced students in the school environment to manage their gifted identity, it differs in that these strategies were not found to be operating at the elementary school level. (Coleman & Cross, 2005; Swiatek, 2002).

The majority of participants at Clareville perceived that a challenging curriculum was not usually offered to them in the regular classroom, but was mostly available to them in their extension classes. While most of the participants spoke of their pleasure at being able to attend weekly maths and English extension classes for example, not all the participants were afforded this opportunity, or were able to replace their regular class work with extension work. These participants were more likely to feel frustrated academically through lack of challenge than pressure to perform well academically. Rather a great deal of pressure was experienced by participants who were members the schools elite sporting teams, as they were concerned about performing well in front of peers in school sporting events: *When we played cricket they sometimes expect highly from me when I got out for a duck against St Stevens they weren't that happy* (Sam, Grade 5, Clareville).

Competition and grades were not referred to as stressful by St Anne participants. They were not expected to perform highly in all subjects levels all day. While they attended extension flexible programs for maths and English they spent the rest of their school day in the regular classroom. They were, however, aligned with their female counterparts at Rosemount in their perceptions of other types of stressful events in the school environment. For example, lack of time to complete homework, as well as the pressure to meet the high expectations of important others. Research into the behavioural patterns of gifted girls and boys has suggested that gifted girls may experience more stressors in the school environment due to internalised cultural beliefs and societal expectations (Silverman, & Miller, 2007). For example, characteristics that have traditionally been encouraged in boys, such as independence, confidence and competence, have been linked with positive stress management in previous research. Despite the efforts of staff at Rosemount, and to a certain extent at St Anne's school, to dispel traditional female myths, the girls probably were still aware of societal messages that expected females to be sensitive, gentle, helpful and to cater to the needs of others before themselves. While not all the gifted girls in this study appeared to follow this traditional female role, many were found to demonstrate some of these characteristics. It is interesting to note that the female participants who seemed least to follow this traditional female role, and instead mirrored the male participants in many of their perceptions, were the least likely to describe school events as stressful.

### **Theme 3: Power**

Clareville participants differed in their perception from the other two schools in that boys with athletic ability were described as holding an elevated status on the playground. While non-sporty boys ran to the playground courts in hope of being admitted into a game, top rated athletic boys could count on being included in any of the sports games they felt like playing on the day. These were the boys described as being in the first division of the school sports teams. Oliver, in Grade 5, defined these boys as being the ones who: *Played for the glory of being high on the table rather than playing for fun and a bit of exercise* (Oliver, Grade 5, Clareville). Athletic boys, he



perceived, had a competitive quality that ensured that they made it their job to excel at sport. While the sporty boys held sway on the playground, school officers held power in the school corridors. These boys were selected by teachers and were expected to police the school corridors. Robin, in Grade 6, was a top rated athlete and a school officer and related how he got a lot of satisfaction from this role: *I like the way everyone looks up to me as a role model* (Robin, Grade 6, Rosemount). While the power of athletic boys and school officers was generally accepted by all participants they believed that the headmaster and vice principal held the most influence over the boys through the enforcement of a strong code of discipline. This hierarchical framework of power led participants to believe that the school's gifted population generally occupied a lowly position within the school's power structure. They perceived this to be the case as gifted boys were seen as unathletic, unless they had consciously downplayed academic ability and proved their sporting ability on the playground.

St Anne participants generally perceived that the *girly girl* group held power on the playground. Participants in the Grade 5 and 6 classes believed that this group of girls used tactics such as public humiliation or teasing in an effort to influence girls extra-curricular and fashion choices. Elle in Grade 6 for example communicated that she had decided to give up ballet in an effort to conform to this group of girls' perceptions: *I did do ballet, but I stopped doing that because they were like oh, ballet is so for little kids. You're cool if you do dance like jazz and tap and modern and all that* (Elle, Grade 6, St Anne). Although this group of girls was perceived as clearly trying to influence their peers to look and behave in stereotypically female ways, all nine of St Anne participants believed that they did not have the power to exert influence over the academic choices.

Participants at Rosemount differed from the other two schools in their perceptions of power in that none of them believed that one group of children exerted power over another group on their playground. Male and females were also perceived as having equal status both inside the classroom and outside on the playground.

## Discussion

The acceptance or rejection of gender biased societal myths by the school was found to contribute to the participants' experiences of their school social context. The social contexts of the single-gender schools seemed to have reinforced certain traditional gender stereotypes more strongly than the co-educational school in this study. For example, culturally orientated activities were encouraged at the girls' school while athletic interests were promoted at the boys' school. The promotion of one type of male identity at Clareville led participants to perceive that academics performance was not a quality admired by peers; on the contrary, it was more likely to be seen as problematic. The perception of academic achievement as unmasculine in school environments that support only one type of masculine identity has been noted by previous research (Dalley-Trim, 2007; Smith, 2007). The fact that gifted children at the elementary level were managing their identity, however, is not consistent with current research, as children at this level have been seen to be less governed by expected behaviour norms by peers (Bain & Bell, 2004).

While giftedness was accepted on the St Anne playground there was a group attempting to influence girls to adopt stereotypical gender behaviours. These findings suggest that the notion that single-gender schools for girls offer a more contemporary female identity than co-educational schools may be oversimplified. Fortunately the flexibility of the gifted program and the schools social and emotional structures ensured that many different types of female identity were accepted on the St Anne playground. The social context at Rosemount was described by participants as one that not only celebrated diversity, but also accepted several different types of gender identities. For example male students were encouraged not only to take part in sporting events, but outside of school academic and creative writing competitions as well. This multi-dimensional perception of students' talents and interests may have fostered the positive attitude held towards both the non-athletic boys and girls by male participants at this school. The fact that playground groups were generally made up of girls and boys at Rosemount may have contributed further towards the flexible

gender expectations of students at this school. This finding is not consistent with previous research, which has found that elementary school students prefer to work and play together in single-gender groups (Leman, Patrick, Tenenbaum & Harriet, 2011.).

An additional finding of this study was that gifted boys and girls at the elementary school level generally had different perceptions of the social school induced stressors. This finding differs from previous research which founded gender differences coping strategies in place at the high school level, but not in the elementary school level (Swiatek, 2002). This may be because these studies utilised quantitative methods, whereas this qualitative study was able to follow up on individual concerns. The socialisation process of females may have led several of the girls to perceive that in order to please important others in both their school and home environment, high grades needed to be achieved consistently (Kerr & Foley Nicpon, 2003). Schools could endeavour to create optimal social contexts by ensuring that they promoted diverse gender roles, promoted gender equity and made students aware of the role the “new media” plays in the promotion of stereotypical gender identities.

The acceptance or rejection of gender biased societal myths by the school was seen not only to impact the male participants’ experiences of their school social context, but also female participants’ experiences as well. For example, while St Anne school staff generally made a conscious effort in their classroom instruction to break free from the traditional female stereotype of girls not being capable in mathematics and the sciences, they may have unwittingly supported it in other subject areas. For example, learning to play an instrument was mandatory at the school, while playing sports was not.

## **Conclusion**

A phenomenological framework has enabled this study to offer an insider’s view of what it is like to be a gifted girl or boy in the specialised school setting in three different types of school settings. Despite the offer of an enriched and challenging curriculum at all schools participating in this study, social context was found to be a key factor in the talent process. Participants at schools that adopted a specialised program, but overall did not support an academic environment tended to mask their academic ability from peers. Additionally, school gender expectations played a key role in the participants’ perception of what made a child popular or how they should behave on the playground. Schools that adopted a flexible attitude to gender allowed not only for academic success in a variety of areas, but removed the fear of stigmatisation by peers.

Schools have been seen in the research literature as largely social institutions that are able to reinforce or reshape societal gender definitions (Cross & Swiatek, 2009). The social contexts of the single sex schools seemed to have reinforced more traditional gender stereotypes than the co-educational school in this study. It would be simplistic to perceive from these findings that all single sex schools would have these results. Gender messages communicated by teachers may have inadvertently reinforced or broken down certain gender stereotypical roles and assumptions in the three school environments.

## References

- Anderson, C.A., & Bushman, B.J. (2001). Effects of violent video games on aggressive behavior, aggressive cognition, aggressive affect, physiological arousal, and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science*, (12), 353-359.
- Anderson, C.A., & Bushman, B.J. (2002). Media violence and the American public revisited. *American Psychologist*, 57, 448-450.
- Bain, S. K., & Bell, S. M. (2004). Social self-concept, social attributions, and peer relationships in fourth, fifth, and sixth graders who are gifted compared to high achievers. *Gifted Child Quarterly*, 48 (3), 167-178.
- Calvert, S.L. (1999). *Children's journeys through the information age*. Boston.
- Carrington, N. G., & Bailey, S. B. (2000). How do preservice teachers view gifted students? Evidence from a NSW study. *Australasian Journal of Gifted Education*, 9 (1), 18-22.
- Chan, D. W. (2005). The structure of social coping among Chinese gifted children and youths in Hong Kong. *Journal for the Education of the Gifted*, 29, 8-29.
- Coleman, L.J. (2005). *Nurturing talents in secondary school. Life in the fast lane*. NY: Teachers College Press.
- Coleman, L.J., & Cross, T.L. (2005). *Being gifted in school. An introduction to development, guidance, and teaching*. Waco, TX: Prufrock Press.
- Conrad, K., Dixon, T., & Zhang, Y. (2009). Controversial Rap Themes, Gender Portrayals and Skin Tone Distortion: A Content Analysis of Rap Music Videos. *Journal of Broadcasting & Electronic Media*, 53 (1), 134-156.
- Cross, T.L. (2013).
- Cross, T.L., & Swiatek, M.A. (2007). Social Coping Among Academically Gifted Adolescents in a Residential Setting: A Longitudinal Study. *Gifted Child Quarterly*, 53, 25.
- Dalley-Trim, L. (2007). The boys' present... Hegemonic masculinity: a performance of multiple acts. *Gender and Education*, 19 (2), 199-217.
- Eddles-Hirsch, K., Vialle, W., McCormick, J., Rogers, K. (2012). Insiders or Outsiders: The Role of Social Context in the Peer Relations of Gifted Students. *Roeper Review*, 34 (1), 53-62.
- Eddles-Hirsch, K., Vialle, W., Rogers, K., & McCormick, J (2010). "Just Challenge those high ability learners and they'll be alright!" The impact of social context and challenging instruction on the affective development of high-ability students. *Journal of Advanced Academics*, 22 (1), 102-124.
- Foust, R. C., Hertberg-Davis, H. L., & Callahan, C. M. (2008). 'Having it All' at sleep's expense: The forced choice of AP and IB participants. *Roeper Review*, 30, 121-129.
- Giorgi, A. (1985). *Phenomenology and psychological research*. Pittsburgh, PA: Duquesne University Press.
- Herrett-Skjellum, J & M. Allen (1996). Television programming and sex stereotyping: A meta-analysis. *Communication Yearbook*, 19, 157-185.
- Freeman, N. (2007). Preschoolers' perceptions of gender-appropriate toys and their parents' beliefs about genderized behaviors: Miscommunication, mixed messages, or hidden truths? *Early Childhood Education Journal*, 34(5), 357-366.

- Hébert, T. P. (2011). *Understanding the social and emotional lives of gifted students*. Prufrock Press: Texas.
- Jones, K., Evans, C., Byrd, R., Campbell, K. (2000) Gender equity training and teaching behavior. *Journal of Instructional Psychology*, 27 (3), 173-178.
- Kerr, B. A., & Cohn, S.J. (2001). *Smart boys' talent, manhood and the search for meaning*. Scottsdale, AZ: Great Potential Press
- Kerr, B. A., & Foley Nicpon, M. (2003). Gender and giftedness. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (3rd Edition) (pp. 493-505).
- Kerr, B. A. & Larson, A. (2007). How gifted girls become eminent women. In S. Lopez, (Ed.). *Positive Psychology Perspectives* New York, NY: Praeger.
- Kurpius, S. R. & Kerr, B. A. (Eds.) (2005). *Counseling girls and women: Ten years of NSF Gender Equity studies. Volume 1: Talent, Risk, and Resiliency*. Arlington, VA: National Science Foundation.
- Kindlon, D., & Thompson, M. (2000). *Raising Cain: Protecting the emotional life of boys*. Toronto, Ontario: Random House.
- Lee, L. (2008). Understanding gender through Disney's marriages: A study of young Korean immigrant girls. *Early Childhood Education Journal*, 36(1), 11-18.
- Leeman, P. & Tenenbaum, H. (2011). Practising Gender: Children's Relationships and the Development of Gendered Behaviour and Beliefs. *British Journal of Developmental Psychology*, 29, 2011, p. 153-157.
- Levine, M.P. & Murnen, S.K. (2009). "Everybody knows that mass media are/are not [pick one] a cause of eating disorders": A critical review of evidence for a causal link between media, negative body image, and disordered eating. *Journal of Social and Clinical Psychology*, 28(1), 9-42.
- Merriam, S. (2011). *Qualitative Research: A Guide to Design and Implementation*. San Francisco, CA: Jossey-Bass.
- Moustakas, C. (1994). *Phenomenological research methods*. London: Sage Publications.
- Pollock, W. (2002). *Real Boys'. The truth behind the myths*. In the Jossey Bass reader on gender education (p.88-100). San Francisco, CA: Jossey-Bass.
- Pollock, W. & Cushman, K. (2001). *Real boys' workbook. The definitive guide to understanding and interacting with boys of all ages*. New York, NY: Villard Books.
- Reis, S. (2003). Gifted girls, twenty-five years later: Hopes realised and new challenges found. *Roeper Review*, 25, 154-157.
- Rideout, V., Roberts, D. F., Foehr, U. G. (2010). *Generation M: Media in the lives of 8-18 year olds*. Kaiser Family Foundation
- Rimm, S. (2008). *Why bright kids get poor grades: And what you can do about it*. Scottsdale, . AZ: Great Potential Press.
- Roeper, A., & Higgins, A. (2007). *The "I" of the beholder: A guided journey to the essence of a child*. Scottsdale, Arizona: Great Potential Press. Inc.
- Saltmarsh, S. (2009). Becoming economic subjects: Agency, consumption and popular culture in early childhood. *Discourse: Studies in the Cultural Politics of Education*, 30(1), 47-59

- Saltmarsh, S, Robinson, K. & Davies, C. (2012). *Rethinking School Violence: Theory, Gender, Context*. Palgrave Macmillan: NY.
- Sandholtz, S.H., & Sandholtz, J.H. (2010). Confronting gender issues in a novice teacher's classroom: Student and parent/teacher educator perspectives. *The New Educator*, 6(2), 118-134.
- Silverman, L. K., & Miller, N. B. (2007). A feminine perspective of giftedness. In L. Shavinina, (Ed.). *The international handbook on giftedness*. Amsterdam: Springer Science.
- Smith, J. (2007). Ye've got to 'ave' balls to play the game sir! Boys, peers and fears: the negative influence of school based cultural accomplices in constructing hegemonic masculinities. *Gender and Education*, 19 (2), 179-198.
- Smith, S. L., Pieper, K. M., Granados, A., & Choueiti, M. (2010). Assessing gender-related portrayals in top-grossing G-rated films. *Sex Roles*, 62, 11-12.
- Starr, C. & Ferguson, G.( 2012). Sexy Dolls, Sexy Grade-Schoolers? Media & Maternal Influences on Young Girls' Self-Sexualization. *Sex Roles*, 67, (7-8), 463-476.
- Swain, J. (2005). Sharing the same world: boys' relations with girls during their last year of elementary school. *Gender and Education*, 17 (1), 75-91.
- Swiatek, M.A. (2002). Social coping among gifted elementary school students. *Journal for the Education of the Gifted*, 26, 65-86.

# Sustainable Waste Management in United Kingdom Higher Education Institutions

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## **Abstract**

The purpose of this paper is to assess sustainable waste management practices in United Kingdom Higher Education Institutions. A mixed method research approach using Estate Management Statistics data and semi-structured interviews was applied to evaluate the waste collection, recycling and disposal approach, recycling trends and barriers associated with recycling for five UK universities. The results show that all five institutions had increased the amount recycled by using licensed waste contractors. Universities that used coloured-coded bins for their waste collection performed better than those that used single coded bins. The results have identified barriers hindering waste management within universities. Recycling can be increased when such information is widely publicised, awareness is created through education, bins are strategically located and information of what should be placed in each bin provided. The paper provides an analysis of waste management strategies in UK universities. It has identified barriers to recycling and suggests solutions to increase recycling rates.

**Keywords:** municipal solid waste (MSW), recycling, higher education institution (HEI), sustainability, coloured-coded bins, landfill, single coded bin

## Introduction

Cities globally currently generate about 1.3 billion tonnes of waste per year and this is expected to rise to 2.2 billion tonnes by 2025 (Murphy, 2012). As waste generation increases, its management also becomes challenging. An increase in waste generation is a result of high unsustainable consumption rates from urbanization and globalisation (Lehmann 2010; Sembiring and Nitivattananon, 2010). The Department for Environment Food and Rural Agency (DEFRA, 2012) reported that the UK produces 290 million tonnes of waste each year which contributes to a range of environmental issues. The resultant effect of waste sent to landfill is the release of greenhouses gases such as methane, a primary contributor to climate change. For example in 2009, a total of 32.5mt of MSW was generated and collected by local authority and 49% was sent to landfill while 42% was recovered (DEFRA, 2011). In a bid to increase the percentage of waste diversion from landfill in the UK, a landfill tax was introduced in 1996 and this has increased through a tax escalator (CIWM, 2012b). The escalator provides growing incentives for business and local government to promote waste diversion from landfill through recycling (Clay, 2005 and Zhang *et al.*, 2011). As a result waste sent to landfill by Local Authority has decreased by around 7.6% per year (CIWM, 2012) while recovered waste has increased from 41.5% to 42.5% between 2010/2011.

In the UK, Higher Education Institutions (HEIs) are also faced with the problem of waste management. HEIs can be regarded as small municipalities as a result of their size, population and diverse activities that take place on their campuses (Alshuwaikhat and Abubakar, 2008). An increase in population contributes to the volume of waste generated as more products are consumed. The Higher Education Statistics Agency (HESA, 2012) shows that, in 2010/2011, the University of Southampton generated the greatest quantity of waste amounting to 46,334 tonnes. Since universities produce a large volume of waste which is classified as household waste, it is their responsibility to manage it effectively (DEFRA, 2007). Universities have therefore set recycling targets in order to make their waste management practices sustainable so as to reduce the quantity of waste sent to landfill. Furthermore, since a number of the waste streams generated are recyclables, running a recycling program provides universities the opportunity to save financial resources. In 2007/08, the UK higher education sector successfully recycled 26.6% of its waste, a significant increase compared to just 12.7% in 2003/04 (HEFCE, 2010). HESA (2012) and the People and Planet green league (2012) report shows that many HEIs in the UK have improved their waste diversion rate. The statistics shows that waste generated per head in the universities has reduced compared to the previous years, while recycling rate has equally increased.

Previously, HEIs hired contractors to handle all waste management issues (Zhang *et al.*, 2011) but presently, some HEIs have adopted recycling as a strategy to reduce the cost of waste removal. In addition improved recycling on campuses reduces solid waste deposited in local landfills and leads to greater sustainability (Brooks *et al.*, 2011). HEIs encourage the university communities to recycle their waste in various ways; for instance, provision of coloured-coded bins, binless office-recycling schemes. However, students' participation is considered one of the main obstructions to effective recycling programmes on some campuses, which could be cultural behaviour, unwillingness and lack of awareness (Zhang *et al.*, 2011). Some HEIs overcome these problems by providing incentives to students, which serve as a stimulating factor toward their recycling attitude. Other forms of barriers encountered by HEIs during recycling are: lack of space where bins could be kept and lack of financial resources.

This research reviews the importance of sustainable waste management practices in the UK HEIs. It also considers barriers that could be encountered in the process of reducing and recycling waste; thereafter, some solutions to these barriers will be suggested. It aims to identify the best waste management practices in United Kingdom Higher Education Institutions through a systematic review of HEIs policies and practices.

## **Materials and Method**

A mixed method approach was adopted in the study. A desk-based investigation into current and previous sustainable activities was accompanied by semi-structured interviews (conducted through face-to-face and telephone methods) from five HEIs: Aston University, University of East Anglia, University of Essex, University of Kent and Nottingham Trent University. These universities were selected based on their green activities and performances as recorded by the People and Planet green league table for 2012.

The interview method was used to get information on waste collection methods, past and current waste management practices, barriers associated with waste management and ways they can be minimized from the various institutions point of view. In all, fifteen participants were interviewed. Eleven of the participants were estate department staff from the five universities while the four participants were students two of which were members of Green Task Force. The staff selected based on their charge of environmental and operational activities on a daily basis such as: for the interviews were environmental officers, waste and recycling managers, estate officers and cleaning staff. The interview was divided into two parts: the firstly on waste management (collection, recycling and disposal), while the second examined barriers to sustainable waste management. The interviews were self-controlled to last 18 minutes on average and were recorded with respondents' permission for later transcription and analysis.

In addition, data on waste management performance in UK HEIs for 2010/2012 were collected for analysis from the Higher Education Statistics Agency (HESA).

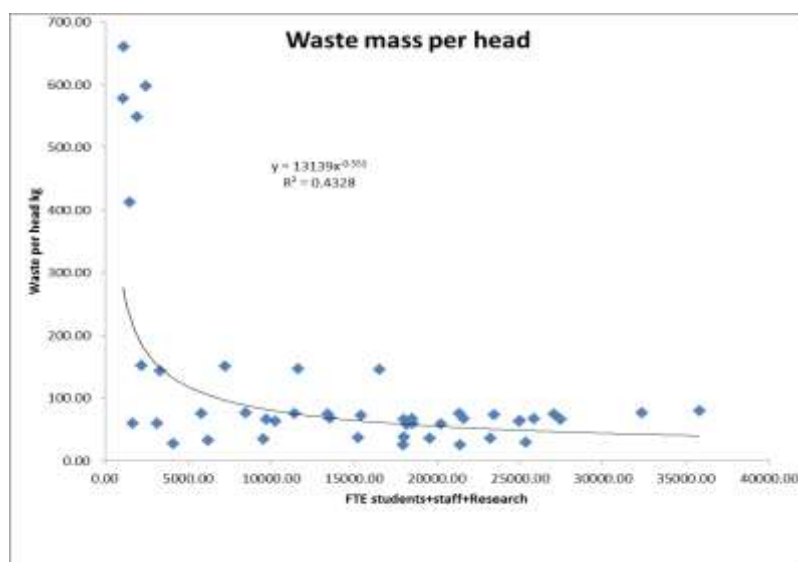
## **Results and Discussion**

Data obtained from the interviewees were analysed by transcribing the recorded conversations into text using Microsoft Word. In addition, the data were coded and categorised into major conceptual areas, according to the interviewees' responses. For example, statements treating the lack of recycling interest among students and staff were placed in a 'cultural barrier' category while those relating to the lack of recycling bins or bags were grouped under financial barrier. Some of the statements were integrated with the result of the quantitative analysis in order to give more in-depth understanding and to see if the Estate Management Statistics (EMS) figures were justified.

Findings from this study should be interpreted cautiously due to the small sample size. More so, the collected data concerning sustainable waste management at the various institutions is based solely on the information provided by the interviewees. In addition, the data is based on personal viewpoints and is therefore subjective. This is because majority of the interviewees were asked to criticise their own places of work. In cases like this, Dahle and Neumayer (2001) claim that interviewees' responses to some extent may be biased. Furthermore, as great differences exist between the various institutions (e.g. number of staff & students, campus size, etc.), their experiences concerning sustainable waste management is likely to be different.

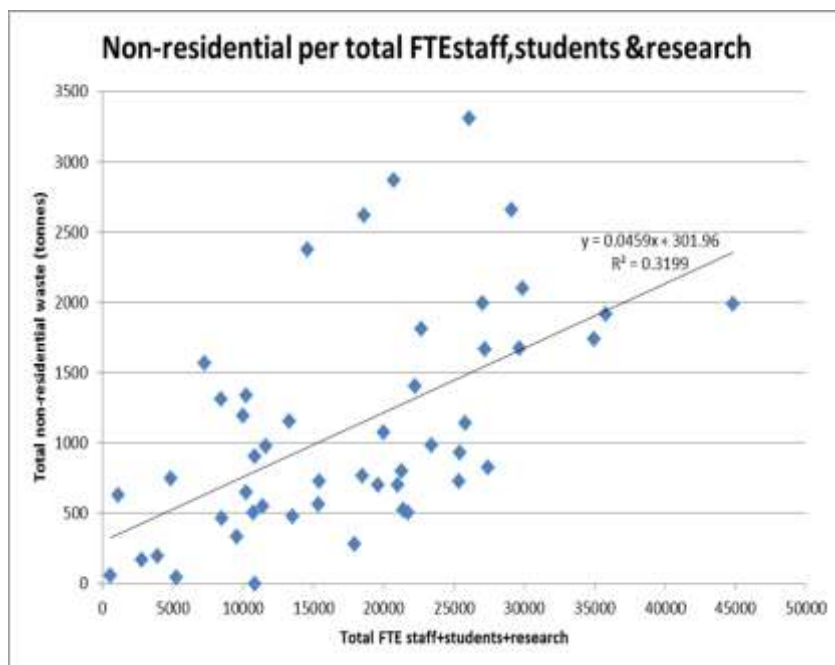
Data extracted from the EMS data formed the basis for this research analysis and scattered linear and power regression graphs were plotted in order to determine relationships between the following: waste mass per head (kg) and population size (total FTEs); total non-residential waste (tonnes) and population size and; recycled non-residential waste (tonnes) and total population.





**Fig 1:** Waste per head (kg) and total population

There is a power law relationship between waste mass per head and total FTE staff, students and research (population size) in UK HEIs as shown in Fig 1. This shows that in general the greater the population the less the waste mass per head is generated. From the EMS annual report 2010 (HEFCE, 2011/17) it was observed that HEIs that produce less waste recycle less while those that produce more waste recycled more. The result also suggests that there is a certain amount of waste that is produced no matter the size of the HEIs. Therefore small HEIs are at a disadvantage when rating on waste mass per head.

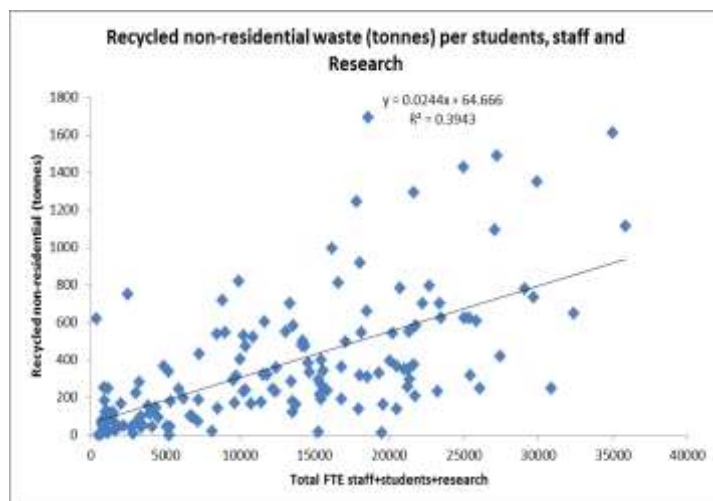


**Fig 2:** Relationship between total non-residential waste and total population size

Figure 2 shows that there is a positive linear relationship between UK HEIs non-residential waste total produced and population size. The result implies that the greater the population size the greater the waste generated.

Generally, there is a positive correlation between recycled non-residential waste and population size in the UK HEIs. The trend line in Figure 3 shows that institutions with smaller

population size tend to recycle little although some of them generate larger tonnes of non-residential waste. However, generally a greater tonnage is recycled as the population size increases. This means that the more the non-residential waste generated, the more the HEIs recycled. This result is similar to the EMS data report (2012/01) which shows that there is a positive correlation between non-residential recycled waste and each HEIs population size. However, one would expect larger institutions to produce more waste and hence a higher amount recycled. A better figure to consider is percentage non-residential waste.



**Fig 3: Relationship between non-residential waste and population size**

#### **Responses from staff**

Generally, it was gathered from all interviewees that the favoured waste collection approach was by licenced private contractors but with sorting prior to collection. HEI waste is made up of mixed municipal waste thus the institutions have different contractors that collect their different waste stream including electrical and electronics equipment, clinical/medical, hazardous, construction and demolition, dry recyclables, and textile waste. Food waste is typically collected for composting (HEFCE 2009/28). The private contractor approach seems to be very beneficial for HEIs as it helps reduce landfill and also generates funds since the recyclable waste materials are sold on. Waste contractors are responsible for sending waste data to the universities for recording purposes as it enables the universities to note their performances, while waste compositional data can be obtained through annual waste audits or survey.

Some institutions do not have records for their recyclable materials while others do not have accurate data. It may be that the institutions are not requesting for the data from their private contractors or the contractors do not collect the data from the site. In a bid to curb the problems of data information, many HEIs in the UK have adopted the Pay by Weight system; a method by which organisations are charged according to the weight of waste collected (Zhang *et al.*, 2008) while others use SMART: meaning saving money and reducing trash a method where institutions are charged for the collection of municipal solid waste—ordinary household trash—based on the amount they throw away. Studies have shown that when the cost of waste is estimated by weight that the quantity of households waste disposed is reduced (Linderfof *et al.*, 2001).

Figure 4 shows responses on the types of recycling bins used at the various institutions. 54.6% of the interviewees admitted that their institutions used the coloured-coded bin schemes along with pictographic representation pasted on the bins to indicate what should be placed in each bin. Institutions that recycled a larger percentage of their waste like Nottingham Trent and Aston University claimed that coloured-coded bins used along with WRAP labelling made their recycling scheme very effective. Table 1 shows coloured-coded recycling bins and types of waste deposited in

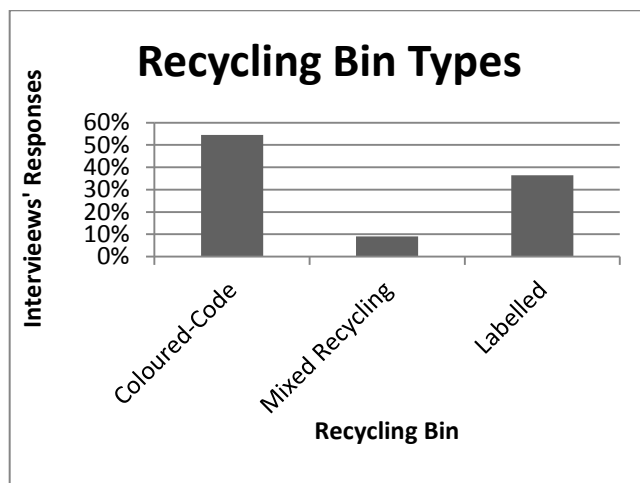
them. This enables every individual in the university community to participate effectively in recycling and accounts for the reasons that their recycling rates are high.

**Table 1: Summary of colour coded bins and types of waste that are placed in them**

University	Colour-coded bins and waste type
Aston	Blue- Paper and cardboard Green- dry mixed recyclable Red-Non-recyclable waste
Nottingham Trent	Blue – papers and card board Red- general waste Yellow- dry mixed recyclable
East Anglian	Blue- general waste Brown- food waste Black- glass Green- dry mixed recyclable

Depositing of waste in the wrong bins can be a result of poor labelling. Another factor is unwillingness to recycle by some members of the universities, which posed serious challenges to many institutions. Many of the universities staff complained bitterly about students' unwillingness to conform to the placement of waste in the right bins even when the labels were boldly written on them. The use of posters is important in achieving recycling aims at the universities; these clearly depict the type of waste to be placed within each bin. Mason *et al.* (2004) reported that posters promoting on coloured-coded recycling bins should be placed near the appropriate bins

In addition, 36.4% mentioned that their institution used labelled bins. These are sometimes not as effective for recycling purposes especially if the labelling is not captivating. A study on labelled recycled bins at the fifteen schools in United States shows that if recycling bin labelling is consistent there will be increase in participation by individuals (recycle across America, 2012). A mixed recycling bin approach was the least mentioned option. This approach is expensive, as more staff will be needed to sort the waste to different recyclable materials. However, it serves as a means of creating jobs for more members of staff in the university. According to DEFRA (2005), source separation of waste has advantages over mixed (commingled) recycling because it is the first step to maximise the value of recycling and the cost and environmental impacts are low. More so, the institutions encourage their students to participate in reuse by donating their unwanted materials to charity. These materials may not be useful to the students but may be useful for others: materials are typically collected by local charity stores from the campus.



**Figure 4:** Types recycling bins

The frequency of weekly waste collection from offices and Halls of Residence (HoRs) varies as seen in Figure 5. The results show that the majority of the universities collect waste five days a week except during weekends or bank holidays. 92.3% of interviewees confirmed that waste is collected five days a week from HoRs. Only 55.6% mentioned that waste is collected five times a week from offices. The reason given by the interviewees for not collecting waste on every working day from the offices was that the number of staff and types of waste produced in each office are the determinant factors. Irrespective of the numbers of staff in each office at each institution, a binless office scheme has been adopted. In this approach, labelled bins are placed on different corridors and staff have to dispose of their office waste into these bins. The concept of the binless office is important because it: encourages all staff of the universities to participate in recycling. It saves sacks, bin liners and labour costs as cleaners will spend less time emptying bins from under individual offices.



**Figure 5:** Frequency of weekly waste collection from offices and HoRs

Figure 6 shows the responses on recycling attitudes across the institutions. 33.3% agreed that the university communities have very positive attitudes towards recycling which is the reason for the increases in recycling. These respondents believed that the recycling information and facilities as well as the educated population should help to inspire the university community to participate. 33.3% also responded with “positive but universities can still improve”, indicating that there is still the potential to increase recycling rates. These respondents indicated that the facilities required are not currently in place and that publicity on recycling and waste reduction could be improved. 27.7% of the interviewees agreed that students should be motivated to recycle by giving them incentives.

However, on the suggestion that recycling rates can be increased using incentives, the question is “what happens when the incentive is withdrawn?” Studies have shown that when incentives used as motivators are withdrawn many stopped recycling (Mason *et al.*, 2004). Thomas *et al.*, (2003) reported that an important motivator agreed by groups of participants was ‘recycling being a common behaviour’. However, recycling may be difficult to achieve if individuals do not develop such habits.

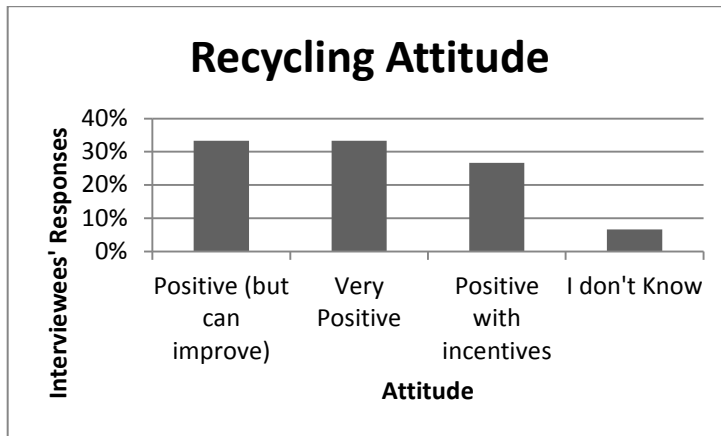


Figure 6: Recycling attitudes

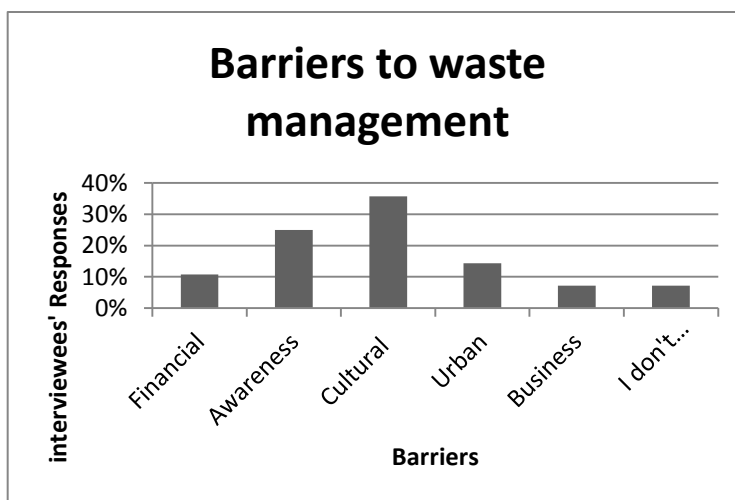


Figure 7: Barriers to waste Management

#### Barriers to sustainable waste management

Figure 7 shows the main barriers to sustainable waste management on campuses as mentioned by the interviewees. The barriers were coded and categorised as follows:

- Financial: lack of financial resource, lack of recycling facilities
- Awareness: lack of information and environmental education
- Cultural: non-environmental attitude and unwillingness to recycle on campus
- Urban: lack of space for putting recycling bins on campus
- Business: product packaging

Many interviewees considered culture (35.7%) as the major barrier to recycling and waste reduction on their campuses. In addition, they claimed that generally some students and staff care less about what happens to their environment “saying people are paid to clean up the waste”. Cultural difference is a serious challenge in many HEIs as students are from different countries and backgrounds. In some cultures or societies, waste is not separated or recycled and so it can be dumped anywhere. More so, environmental awareness is connected to culture but not all staff and students are interested in a sustainable environment because many are not aware of the benefits of environmental issues. Previous studies have argued that culture is an obstacle to sustainability and it has been linked to faculty and administration, which may be difficult to change because it is conventional (Allen, 1999; Riera, 1997; Van Ginkel 1996). Therefore, for individuals to understand the daily consequences of their activities on the environment they have to be aware. This is because

behavioural change in people and change in culture is not expected to take place unless people can understand the benefit and the reasons for doing so (Mahle and Neumayer, 2001).

### **(1) Lack of Environmental Awareness**

This is the second barrier to sustainable waste management (25%) in the five institutions. Lack of sustainability information, education and awareness was another significant point raised by staff. Campaigns on waste reduction and recycling will not be meaningful if the people concerned do not know how and why they should carry it out. Institution administrators and all staff must be familiar with the benefits of sustainable waste management so that environmental policies can be established and enforced. Students must be informed on how their habit can affect the environment and what their roles should be to minimize it. There are various ways by which awareness can be raised in higher education. According to Neumayer (1999), an institution can find effective ways of creating effective awareness by applying human capital, that is the knowledge and skill that human possess. A study on behaviour analyses shows that habits can be changed through public education (Creighton, 1999).

Previous studies from other HEIs have shown that the use of visual means, which includes stickers, newspaper articles, posters etc. and open lectures, are effective ways of communicating environmental issues. However, other interviewees claimed that despite leaflets on recycling is in welcome packs there has not been any improvement.

### **(2) Urban locations**

This is another barrier mentioned by 14.3% of the interviewees and it has to do with space and location of their campuses. It was observed that space on campuses and HoRs varies from institution to institution. Some HoRs are relatively old with little space while others have been recently constructed and so have allowed space in kitchens for recycling. In addition the number of students per accommodation varies from institution to institution. Lack of space complicates waste management on HEIs especially recycling, which requires big recycling bins. Some of the interviewees complained that their students would have recycled more if there were enough spaces in their HoRs where recycling bins and bags could be kept. Creating spaces for recycling bins in old HoRs on campus will be very expensive and may be difficult.

However, one can argue that lack of space is not a good reason for students and staff not to recycle because they could maximize the use of the recycling bags or bins that were provided. Mahle and Neumayer (2001) reported that urban location and lack of space in HoRs cannot be regarded as a valuable excuse not to recycle in institutions. This is because there are initiatives in many of the HEIs implementing sustainability activities. Hence, initiatives require commitment, coordination, adequate communication and reliable contractor.

### **(3) Lack of Financial Resources**

This is one of the barriers mentioned by some interviewees (10.71%). A previous study by Mahle and Neumayer (2001) reported that lack of financial resources was the major barrier towards waste reduction in HEIs. One can argue that it was because HEIs recently introduced sustainability into their management plan and there were no funds to purchase the necessary facilities. Now, many institutions have invested in numerous recycling bins, bails and plants yet waste generation is still increasing.

However, many institutions now recycle larger percentages of their waste which in turn generates funds. In addition, any reduction in the percentage of waste sent to the landfill will save increases in landfill tax. Another study revealed that cost can be saved on greening initiatives but a common problem to this is that universities only have a finite amount of capital available for greening measures (Zhang *et al.*, 2012).

#### **(4) Business**

Few of the interviewees mentioned packaging of products as a major barrier to waste reduction on their campuses. This is because packaging of some products sold on campuses fall within the Package and Packaging Waste Directive 94/62/EC and 2004/12/EC (DEFRA, 2012). However, producers of some of the products sold should be advised to use materials that are flexible for packing. These materials offer critical sustainability benefits, which include reduced product waste, reduced package weight and improved package-to-product ratio. Flexible packaging has numerous: conserving energy used in manufacturing and transportation, reducing food waste through improved packaging barrier, to minimizing packaging waste. Cleaning staff mentioned that the university is always very dirty early in the morning especially Mondays before they start cleaning up because the cleaning staff do not work on weekends. Another interviewee suggested that *“the university will be very clean if the sales of liquor can be stopped”*. This can only really be tackled by educating the offenders to behave responsibly.

#### **Responses from Students**

Four students were interviewed: two reside on the campus and the others off campus. Students residing in the institutions HoRs responded that they wish to recycle but there was no space in the kitchens to keep where recycling bins. In addition, a student mentioned that there are no bins for landfill waste and they had to comingle waste in their HoRs. However, students residing off campus believed that the institution has sufficient recycling bins but some students do not check the labels on the bins before using them.

When students were asked if the university should purchase coloured-coded recycling bins or print posters showing what should be deposit in each recycling bin. Their response was that the institution has sufficient recycling bins but some are not strategically located. In addition, waste reduction or recycling is a behaviour that can be developed by anyone that is willing to even without any incentive. Therefore, the university should endeavour to print bold posters and place them near the recycling bins. Many students are willing to reduce the amount of waste generated if the necessary facilities are in place, hence the available bins should be maximised rather than motivating people with incentives. One may argue that the funds that will be used as incentives should be diverted to printing of posters and educating the university community on the advantages waste reduction and recycling.

#### **How barriers to sustainable waste management can be overcome**

Many interviewees have suggested how to curtail the above mentioned barriers. These have been categorised as: public lectures - educating the university community on the effects of sustainable waste management; visual aids – information- posters on items that should be placed in each recycling bins, campus magazines, leaflets in welcome packages, information on recycling should be placed at strategic locations on campus; teaching sustainability as part of the university’s curriculum; environmental policy- needs to be freely available; staff training especially in the area of procurement. Virtually all these ideas relate to enhancing communication on sustainability.

#### **Conclusions**

This research has evaluated how far HEIs in the UK have been able to manage their waste sustainably, which ranges from collection to reduction, reusing and recycling. In addition, the study has also been able to identify barriers hindering waste management and how it can be reduced. Waste minimisation and prevention is the key to sustainable waste management and since waste is inevitable in each campus, it is best to uphold the waste hierarchy. It is the bedrock the Environmental Strategy for many HEIs.

In conclusion, as the number of staff and students in each UK HEIs increases year on year, it is most likely that waste generation will also increase. This study has observed the waste

management performance from the five institutions and it can be concluded that for sustainable waste management to be effective the following are necessary: (i) publicity and awareness (ii) education; (iii) well labelled coloured-coded bins; (iv) placing of posters and stickers closer to each bins and; (v) environmental policy. These measures are cost effective and can contribute towards the greening of each HEIs campus.



## References

- Allen, A. (1999) Institutional Change and Leadership in Greening the Campus. In *Sustainability and University Life*. (ed. Leal Filho, W.) Peter Lang Europäischer Verlag der Wissenschaften, Frankfurt am Main.
- Alshuwaikhat, H. M. & Abubakar, I. (2008). An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices. *Journal of Cleaner Production*, 16:1777-1785.
- Chartered Institutes of Waste Management (2012). Sustainability in A land of Opportunity... Materials to land re-use offers great potential. *The Journal for Waste and Resource Management Professionals* May 2012 edition.
- Clay, S. (2005). Increasing University recycling: Factors influencing recycling behaviour among students at Leeds University. *Earth and Environment*, 1:186-228.
- Creighton, S. H. (1999) *Greening the Ivory Tower*. Improving the Environmental Track Record of Universities, Colleges, and Other Institutions. MIT Press, Cambridge (Mass)
- Dahle, M. & Neumayer, E. 2001. Overcoming barriers to campus greening. *International Journal of Sustainability in Higher Education*, 2:139-160.
- Department for Environment Food and Rural Agency (DEFRA, 2011). Waste Data Overview, June 2011.
- Department for Environment Food and Rural Agency (DEFRA, 2012). Packaging waste and producer responsibility <http://www.defra.gov.uk/environment/waste/business/packaging-producer/>
- Department of Environment Food and Rural Affairs. (2007). *Classification and reporting of waste*. London: DEFRA.
- Higher Education Funding Council for England (HEFCE, 2010). The higher education workforce framework 2010, Bristol.
- Higher Education Funding Council for England (HEFCE, 2011/17). Performance in Higher Education Estates EMS annual report 2010  
[http://www.hefce.ac.uk/media/hefce1/pubs/hefce/2011/1117/11\\_17.pdf](http://www.hefce.ac.uk/media/hefce1/pubs/hefce/2011/1117/11_17.pdf).
- Higher Education Statistics Agency (HESA 2012). Estates Management Statistics: Environmental Information 2010/11  
[http://www.hesa.ac.uk/component/option,com\\_pubs/Itemid,286/task,show\\_year/pubId,1736/versionId,55/yearId,276/](http://www.hesa.ac.uk/component/option,com_pubs/Itemid,286/task,show_year/pubId,1736/versionId,55/yearId,276/). Assessed 27/05/2012.
- Higher Education Statistics Agency (HESA 2012). Estates Management Statistics: Environmental Information 2010/11  
[http://www.hesa.ac.uk/component/option,com\\_pubs/Itemid,286/task,show\\_year/pubId,1736/versionId,55/yearId,276/](http://www.hesa.ac.uk/component/option,com_pubs/Itemid,286/task,show_year/pubId,1736/versionId,55/yearId,276/). Assessed 27/05/2012.
- Lehman, S. (2010). Resource recovery and material flows in the city: Zero waste sustainable consumption as paradigms in urban development. *Sustainable Development Law and Policy*, 11, 28-38.
- Linderhof, V., Kooreman, P., Allers, M. and Wiersma, D. (2001). Weight-based pricing in the collection of household waste: the Oostzaan case. *Resource and Energy Economics*, 23:359-371.

- Mason, I. G., Oberender, A. & Brooking, A. K. (2004). Source separation and potential re-use of resource residuals at a university campus. *Resources, Conservation and Recycling*, 40:155-172.
- Murphy, C. (2012). What a waste... In Chartered Institute of Waste Management (2012d). *The Journal for Waste and Resource Management Professional*, August edition
- People and Planet Green League (2012). <http://peopleandplanet.org/aboutus/> Assessed 29/05/2012
- Recycle across America (2012) Top 10 Reasons Why Standardized Labels are so important. <http://www.recycleacrossamerica.org/Top-10-Reasons-for-National-Standardized-Labels.html>
- Riera, P. (1996). Environmental Policy at the Universitat Autonomia de Barcelona. In Implementing Sustainable Development at University Level – A Manual of Good Practice (eds. Leal Filho, W., MacDermot, F., and Padgam, J) CRE-COPERNICUS, Bradford
- Sembiring, E. and Nitivattananon, V. (2010). Sustainable solid waste management toward an inclusive society: Integration of the informal sector. *Resources, Conservation and Recycling*, 54: 802–809.
- Thomas, C., Slater, R., Yoxon, M., Leaman, J. and Downing, J. (2003). What makes People recycle? An evaluation of attitudes and behaviour in London Western Riverside. In: *International Solid Waste Association World Congress*, Melbourne, Australia.
- Van Ginkel, H. J. A. (1996) Implementing Sustainable Development: A Case Study. In Implementing Sustainable Development at University Level – A Manual of Good Practice. (eds. Leal Filho, W., MacDermot, F., and Padgam, J.) CRE-COPERNICUS, Bradford.
- WRAP. <http://www.wrap.org.uk/content/new-figures-carrier-bags-use-released-wrap>.